



## Neurectomy of the Superior Maxillary Division of the Trifacial.\*

By J. M. MEYER, D.D.S.

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1. *Neuralgia, incurable by other means, finds remedy in removal of the affected part.*

2. *In proportion as operations for neuralgia are limited to the division of peripheral branches, the prospects for permanent recovery become less.*

The surgeon is not to rush into operation for the glory of "a heroic attempt," but is to apply Rule 1.

The true surgeon is not he who has alone the ability to perform an operation, but, the ability to judge *when* and *where* to operate.

When considering operation upon the second division of the fifth, Rule 2 will call attention to the fact that when the superior maxillary nerve is exposed at the foramen rotundum, the only branch missed is the recurrent superior maxillary passing to the dura mater; this central operation has, however, the drawback of causing paralysis of the motor branches of the facial for the palatal muscles which enter Meckel's ganglion and join the palatal nerve through the Vidian.

Operations for the division of this nerve were heretofore accomplished by trephining the antrum and through the double opening cutting the nerve at a point as near foramen rotundum as it was possible to reach: with varying results.

The principal reason for failure in these operations, I think, is to be accounted for by lack of space to see what is being done. A principle to be remembered is, clean section and thorough removal of a nerve. The difficulty to see every step of the operation has led me to look for a means of reaching the spheno-maxillary fossa that would overcome this difficulty. Facial surgery also demands that disfigurement be avoided, and to apply this rule, cleavage lines of the skin, at the same time so placed

\* As recommended in Operative Surgery by Th. Kocher, M.D.

as to avoid the course of important superficial nerves and vessels, must be considered.

**Case.**

Male, aged 29, physical development, extraordinary; good health. History of disease: In the spring of '96 had occasional attacks of slight neuralgic pains in the right infra-orbital region; these attacks at first slight and at intervals of weeks, became more severe and frequent; medical advice, referred to a dentist with the opinion that the pain was of dental origin. His dentist, a man of ability, secured the following history of dental lesions: When a boy, was struck with snowball, containing a piece of ice, upon right sup. lateral incisor, resulting in devitalization of the pulp, and subsequent abscess that did not yield to treatment; after a period of several months, the tooth was extracted. The right sup. cuspid came into position so rotated that the mesial surface presented labially; an attempt was made to correct this irregularity, but was abandoned after two months' strain under regulating appliance had failed to change the position.

Upon examination, it was seen that the right sup. second molar of the deciduous set was never replaced by its permanent successor; also that the third molar upon the same side was not erupted; otherwise there was no apparent cause for disturbance of the fifth. The deciduous molar was extracted, and I was called upon to visit the patient to explore for the teeth that had not put in an appearance. The parts were explored, the antrum opened, but no trace of the teeth was found. In the meantime, the pain increased, and at intervals of only hours or minutes; the pain was described by the patient as "a series of electric shocks;" the slightest motion of the superior lip or ala of the nose would cause the paroxysm. All metal fillings on the affected side were removed and tests made for pulp disturbance, then refilled with gutta percha—no relief. Symptoms increased, involving parts supplied by second and third divisions of the fifth.

October 16, 1896, patient called at my office and stated that his dentist had discharged him and advised an operation upon the nerve. Careful examination revealed nothing more than had been discovered by previous exploration. The patient was in a condition leading to exhaustion—not able to eat, or sleep more than a few minutes at a time.

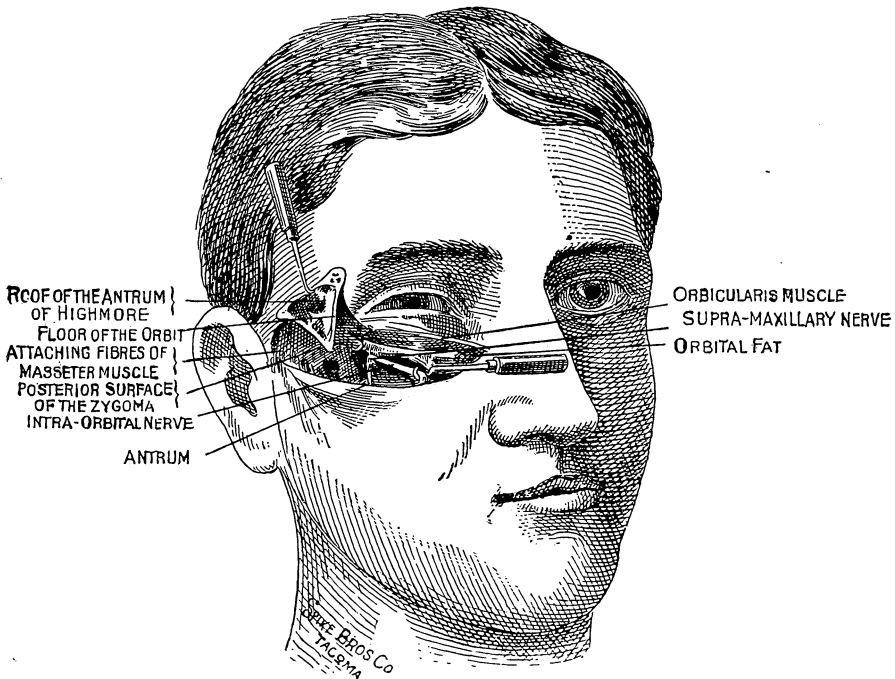
To further convince myself that the missing bicuspid and molar were not imprisoned in the palatal process, the patient was placed in a chair and the X-rays thrown upon the affected part. To secure a negative, a pocket of rubber dam was made to fit the roof of the mouth; a film was placed in this and the edges of the dam fastened with rubber cement to keep out moisture. The result, after thirty minutes exposure, was a

well-defined negative, a print from which gave the outline of the teeth with pulp cavities plainly visible, but no trace of imprisoned teeth.

The patient was sent to the hospital to prepare for operation the following morning.

Considering the several conditions mentioned existing in the superior maxillary bone from incisor to tuberosity, the idea of an operation upon the part of the nerve first affected (the infra-orbital) was not to be entertained. Rule 2 was given full sway; indeed, the operation performed was chosen

#### Operation.



in preference to removal of the Gasserian ganglion, only on account of the greater danger to life in the latter, which remained a last resort in case of failure. Again, I mention the fact that many cases of failure, with final recourse to breaking up, or removal of, the ganglion, I attribute to lack of thorough treatment in the first attempts.

October 17, 8 a. m. Patient prepared and anæsthetized. An incision, starting 1 cm. in a median direction from the infra-orbital foramen, running obliquely downward, but mainly horizontally outward to the anterior inferior border of the zygomatic arch. At the median end of this in-

cision, the angular artery was drawn back; at the distal end, the transverse facial artery drawn down, Steno's duct remaining below. The incision at the median end passed down to the bone between the lower margin of the sphincter of the eye and the origin of the levator labii superioris; the orbicularis lifted with the periosteum as far as the border of the orbit; the levator labii detached with the periosteum until the infra-orbital nerve was exposed, where it emerged from the canal of the same name; the nerve was grasped with a tenaculum and drawn out of the way. The lateral portion of the incision passed above the attachment of the zygomatic muscles to the anterior attachment of the masseter; the former were divided at their origin, and the latter detached from the lower and inner surface of the zygoma.

The periosteum of the body of the zygoma was freed in a vertical direction, by means of an elevator and the bone chiselled through. The external surface of the sup. max. bone was freed to a point corresponding to the floor of the antrum below the malar eminence; the posterior surface, to the speno-maxillary fissure; the outer wall of the antrum was cut through from the infra-orbital foramen in an oblique direction to a point above the second molar tooth, then upward and backward to the speno-max. fissure.

To effect luxation of this portion of bone freed at the zygoma and around the malar eminence, the connection of the malar with the frontal was exposed by a horizontal incision made at a point above the sup. border of the zygoma, and the bone cut through in a downward direction until the speno-max. fissure was reached. The free portion of bone was then grasped with lion forceps, carried outward and upward, the orbital plate fracturing at the weakest point.

By making tension upon the nerve held in the tenaculum and pushing aside the orbital fat, it became an easy matter to follow the nerve through the gaping Highmorian cavity to the foramen rotundum. A hook was passed, and the nerve divided as near the bone as possible; the free portion was then wound around the beak of a pair of forceps, and all the branches carefully followed and detached. The infra-orbital artery was not torn, but this is quite likely to occur. The wound was washed, dusted with boracic acid, the bone replaced, no bone sutures being necessary, as the parts rested in perfect position, and when the periosteum was brought together with catgut sutures, remained filled. The soft parts were united with three deep interrupted sutures of silver wire, and superficial sutures of silk, to hold the edges in perfect contact. Boracic acid, sterilized gauze, cotton and a head bandage covering the left side of the face, completed the dressing.

There was no pain of the same character as before, the wound healed by first intention, leaving a scar scarcely visible. Patient improving daily; fifth day, no more pain. The deep portion of the wound did as well as the external. For a few days, there was a bloody discharge from the antrum through the nose, but by strict attention to irrigation and use of antiseptic douches, there was no infection.

To this date—June 30, '97—there has not been the slightest return of the original trouble, and there is absolutely no disfigurement.

There was no hemorrhage that required other means than pressure with gauze to control.

The satisfactory results, as far as space for operating is concerned, leads me to believe this method as far superior to the old, as the Hartley-Krause method for reaching the Gasserian ganglion is superior to that of Rose.

The operation was performed in the presence of the Senior class of the Tacoma College of Dental Surgery.

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## The Milliampere-Meter in Cataphoresis.

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By F. T. VAN WOERT, M. D. S., Brooklyn.

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The publication in *ITEMS OF INTEREST* of remarks made by me at the Mountain Meeting and on previous occasions, has brought a large correspondence of inquiry respecting the construction of the numerous parts of cataphoric outfits. The principle question is as to the kind of milliampere-meter best suited to dental purposes. The following expresses my views, and I shall be pleased to read any discussion that may follow. It must be understood in the beginning that these deductions are based on the advantages and disadvantages found in electro-therapeutics, and not in general electricity.

The question is asked: "Which is the best and most durable form of milliampere-meters for physicians' or dentists' use?" One that is least affected by constant use or by loss of magnetism in the permanent magnetic needle or field, according to the construction of the instrument. All permanent magnets lose more or less of their magnetism. This is a well known fact stated in all the text books on the subject. For this reason I consider a meter that is governed by the earth's magnetism the best for therapeutic or dental use. If the needle demag-

**The Best  
Milliampere-Meter.**

netizes the earth's magnetism does not attract it so strongly, neither does the current which is passing through the coils of the meter attract it to the same degree. In this way it equalizes and compensates for the loss of the magnetism in the needle.

Fig. 1 illustrates a meter constructed on this plan. The magnetic needle in this instrument is in the form of a horseshoe, the ends swinging in a groove in a block of copper. The object of this is to make it dead-beat, or, in other words, to cause the needle to come to rest quickly. For

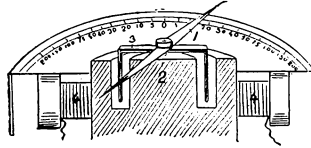


FIG. 1

1. Pointer. 2. Copper Block. 3. Magnetic Needles. 4. Coils.

this reason the needle swinging in the copper block induces a current in the copper which opposes the needle, thus we have the effect of the currents opposing each other, which brings the needle to rest in one or two oscillations.

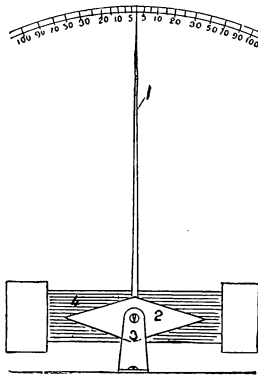


FIG. 2

1. Needle. 2. Magnet. 3. Support. 4. Coils.

Another form is the upright meter illustrated in Fig. 2.

This has only one point of advantage in its favor. All others are against it for fine and delicate measurements. It is more useful as a simple indicator than anything else. Its being upright makes it easy to read the scale. The needle is kept at zero by gravity. When the needle demagnetizes it reads low, that is to say, it does not show as much current on the scale as is actually being used, which is a very objectionable feature from a therapeutic point of view.

Still another is the instrument with permanent magnets for the controlling field. Fig. 3. The necessity for a meter that would not be affected by strong magnetic influences was developed with the dynamo, for the reason that the old form of instruments could not be used owing to the enormous magnetic currents generated by the dynamo. The convenience of this form of meter is the ability to place them in any position without regard to the surrounding pieces of metal, or direction of the earth's magnetism, has made it a very popular instrument; but this instrument is subject to the same objection, namely, demagnetization of the permanent magnet, as in the upright meter, and it is a fact that this instrument cannot be relied upon for making fine measurements, unless it is re-calibrated with a standard instrument frequently. When these magnets demagnetize, this instrument reads high, that is, the scale indicates a greater current than is in reality passing. This varies in ratio with the loss of magnetism in the controlling field, from a small fraction to

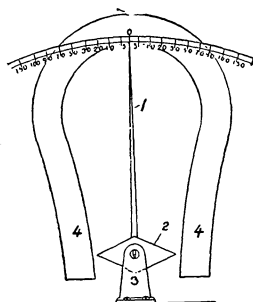


FIG. 3

1. Pointer. 2. Needle between poles of permanent Magnet 4-4.

a large variation. The electro-magnetic needle is always changing in intensity by the varying current passing through it, thus altering continually the strain on the permanent magnets. This fact will cause the permanent magnet to demagnetize with a greater or less rapidity, according to the amount of use it is submitted to.

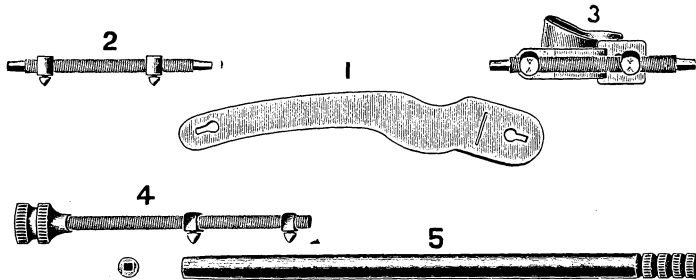
These are the three standard principles on which meters are constructed, and the ones to be considered in selecting an instrument for cataphoric purposes, and as a result I have selected the one which seems to me all that is practical, and the only one to be relied upon for the purpose named, which is the one controlled by the earth's magnetism, because, as I have already stated, its accuracy has been proven, and the only precaution necessary is to keep it a little distance, say two or three feet, from steel instruments, iron safes or pipes, which is less than can be said against any of the other forms. All others are sure to vary in their read-

ing, and are thus not reliable. A few experiments with the standard instruments made will prove these assertions to be correct. For instance, place a half dozen of the various makes in series with the same current passing through them, and a great variation will be observed in their readings. This matter of meters is quite important and should receive a thorough investigation. Therefore I hope the reader will feel free to criticise as severely as possible any of the deductions made by me, as I seek the truth, the whole truth, and nothing but the truth.

### The Matrix.

By E. BALLARD LODGE, D.D.S., Cleveland, O.

Among the large assortment of instruments which the dentist is obliged to have at hand, the matrix holds an important position. This instrument is one which has for years been regarded as of great value in certain cases of filling operations, and is to-day used more than ever



before since its advent into the dentist's armamentarium. From the simple clasp of metal, with the wedge of wood to hold it in place, has been evolved a great variety of mechanical devices to subserve the function of a matrix.

These have been made of different metals, and the mechanisms have been most varied. The great number of matrices invented and placed upon the market in times past only proves that there has been a demand for something more efficient than has been heretofore in use. Feeling the need of this in my own practice, and having conceived an idea, I determined to put the same in practical form, and the result was the matrix which is introduced in this article.

A matrix to be most useful should above all be capable of accurate adaptation to the tooth to be operated upon. It should be simple of construction, and as nearly universal as possible. And, lastly, it should



be readily tightened and loosened upon the tooth. Any instrument that does not embody all of these qualities is in such degree deficient.

In my instrument these essentials, I believe, are fully embodied.

A good matrix will bind tightly at the cervical margin and at the lateral walls of the cavity. If it does not do this, a perfect filling cannot be made.

Again, a good matrix assists greatly not only in starting the filling when tin or gold is used, but by insuring the proper amount of material where it should be, and not too much or too little filling, either of which conditions would result in a defective operation.

A good matrix will do much toward producing naturalness of contour and knuckling, the metal band conforming as it does around the tooth accomplishing this result. Then, too, the process of polishing is greatly facilitated. I believe that with the aid of a good matrix, a gold, or tin and gold filling can be made in two-thirds the time and be a much better operation than without it.

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### **Crede Silver Salts.**

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By CHARLES A. NASH, D.D.S., New York.

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With the crowd of new agents and methods nowadays presented to the profession, some very valuable remedies are apt to be overlooked and be unappreciated for a long time, but there is one agent lately offered which has exhibited to me very remarkable and useful qualities, about which many dentists may be glad to know. I refer to the Crede Silver Salts sold by the Messrs. Schering & Glatz, No. 55 Maiden Lane, especially the lactate of silver, which I have found to possess the most efficient antiseptic properties, being at the same time practically non-poisonous, and not irritating when injected into the tissues or sprinkled in dust form into open wounds.

I have injected it into old sinuses of alveolar abscess with the happiest results, reached more promptly than with any other agent. It immediately destroys all bacterial life in putrescent pulps, and puts the canals of dead teeth into perfectly antiseptic condition. I use it in canals in powder and for injections in solution.

It greatly simplifies the treatment of pyorrhea, owing to the fact that it is not soon dissolved, and its effects thereby dissipated, as well as to its powerful germicidal properties.

I have known it to completely abort three attacks of tonsilitis, when used in a eucalyptol spray solution, within twenty-four hours in each case.

On the 4th and 5th of last July I saw the powder dusted upon three severe burns, instantaneously stopping the pain, which did not recur, and effecting a speedy cure.

One case was where a woman's arm from wrist to shoulder was burned by boiling fat, and in the other two cases the burns were on the hands of a child, and were caused by big torpedoes, both severe, and one a very deep, serious affair, in which the child was screaming with pain. His screams stopped in less than one second after the lactate of silver was applied. In all the cases the parts were bound up with bandages saturated with the solution. The child, however, tore them off at the end of an hour, and remained comfortable thereafter, while the black silver stains indicated the continuous action of the silver.

I have seen this powder dusted into wounds, which, in every case, healed up by first intention, showing that germicidal action in its presence is simply impossible. In such cases, of course, inflammation is kept at the lowest point.

I already feel that I could not be without this agent at hand, both at home and in my office, and I believe that in cases of pyorrhea and alveolar abscess the citrate would be still more satisfactory, owing to its lesser solubility, although it has a slight irritant action.

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### **Pulp-Capping with Iodo-Formagen Cement.**

By OTTO BICKEL, D.D.S., New York.

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The ideal of conservative dentistry has always been the successful treatment of pulps exposed by caries. Witzel's antiseptic treatment, the application of cappings to the exposed parts, the amputating and after treatment of the stump; all these theories have been proven to be theories only, and we have yet to find the first instance where the result fulfills the promises of the conservation advocate.

While the capping of freshly exposed, healthy pulps, executed under strict antiseptic measures, has prospects of lasting success, we have been at a loss for satisfactory measures, if confronted with pulpitis.

From time to time we find in our professional literature reports of successful treatment of cases in all grades of inflammation, but, alas! our brethren have soon to confess their optimism; the pulp dies and sends its last message by its close friend and neighbor, the pericementum, in the form of pericementitis.

In attempting the conservative treatment of pulpitis we have had to make a distinction between a mild and a severely acute form, the latter giving no chance of recovery; while in the former case, with all our caution and professional skill, we have only prepared poor little pulp's shroud. This unsatisfactory state of affairs explains the fervor with which everything new that seemingly brings us hope in this direction is greeted.

About six months ago I received news from Berlin telling of the great success of a new preparation, Iodo-Formagen-Cement, for the conservative treatment of inflamed pulps. I tried it, and was surprised at the excellent result obtained in the first case, a pulpitis *acuta totalis*.

The pulp was not exposed, but the softened and infiltrated dentine of the tooth (a first upper molar) extended to one horn of the pulp. I cautiously removed the porous layer of dentine and, when exposed, found the pulp a deep red color.

**Successful Capping  
of an  
Exposed Pulp.**

The patient, a healthy male individual, had suffered agony for three days, and requested me to relieve him of his pain instantly, without extracting the troublesome molar.

Having just read an article highly eulogistic of the new preparation, I concluded to make a trial with the Iodo-Formagen-Cement. Having completed the preparation of the cavity, I applied a wash of a tepid, watery solution of lysol. After having carefully dried the field of operation, I introduced a small portion of Iodo-Formagen-Cement and endeavored to cover the pulp by gently spreading the material over the neighborhood of the exposed pulp, taking special care to avoid all pressure upon it. This was quite a difficult task, as the patient had become extremely nervous and restless, and, furthermore, I did not succeed at first in mixing the cement in suitable form for the delicate work. The cement hardened so quickly that I had to make three attempts before I was successful. The filling was completed with Dentos, and, to my extreme satisfaction, the patient left the chair cheerful, relieved of his excruciating pain. He returned after five days and reported that the tooth had not troubled him in the meantime. That was five months ago, and in a recent examination I have discovered by transluminating the tooth, that the pulp is still alive.

I have since used the Iodo-Formagen-Cement in seventeen cases without having knowledge of a single failure.

I learn that the powder of the cement is a combination of formaldehyde and todine salts, and the liquid consists of eugenol, carbolic acid and lysol.

The inventor explains the effect of the cement in the following way:

"To the carbolic acid is due the quick arrest of the pain, while the tiodine salts and formaldehyde at once neutralize the pus-forming bacteria, especially the staphylo-coccus pyogenes aureus. The tiodine salts, in addition to drying up secretions, exercises a beneficial effect on granulation without irritating the pulp."

Having experienced so many failures with other preparations, I do not want to praise the new capping cement too optimistically, as the time elapsed is rather short to form a final opinion of the Iodo-Formagen-Cement. My intention is to relate my experience with the new material and cause my colleagues to try the cement themselves. *Experimentum docet!*

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## A Plea for Conservative Scientific Progress.

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By CHARLOTTE E. BENTON, D.D.S., New York.

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I think the average dentist—to whom I write, and in whose company I believe I belong—owes much to the "man of one idea," and also to him who of many ideas has made a special study of one, until he seems to have learned all about it. I am very grateful for the pains one has taken to understand cement, and for what another has told us (or will tell for a consideration) about alloy. I feel that it will pay to consider carefully what a great scholar who does gold work that is a thing of beauty and a joy for a long time, at least, has said about gutta percha; and I am not logical enough to see that somebody's finding some very bad work done in somebody's mouth with pink gutta percha, has anything to do with him or his theories.

I may be very crude and uninformed, but I labor under the idea that the best dentist is the one who saves the most teeth for the longest time.

Would that something might broaden us, until we could receive some of the teachings of all men, and *all* of the teachings of *none*.

Wandering during the past summer in the  
**Cin-and-Gold Fillings** quaint old town of Plymouth, Mass., I saw an inter-  
**Defended.** esting demonstration of tin and gold. To learn  
 that gold leaf will weld perfectly to a polished surface  
 of condensed tin is important, for it is a principle of wide application.

It is adapted to incisor and other teeth decayed too near the pulp to permit deep undercuts, or the use of cement and gold.

A beautiful illustration of this was shown in the upper central incisors of a girl thirteen years old. Large labial cavities in each connected with cavities in the distal sides extending to the cutting edges.

It was gratifying to see how rapidly and easily these cavities were filled. When finished there was nothing to indicate the presence of tin.

The operator was Dr. Shumway, who originated the method, and by whom it has been tested a sufficient length of time to insure permanence of work done in this way.

While we are having the results of exhaustive researches laid before us, to which we should give thoughtful audience, let us not in much science forget to use our common sense.

**Science Combined  
with Common Sense.**

While our instruments are being improved, and with chemical and scientific appliances at hand for the relief and prevention of pain, it is startling to have young people come to us for dental work whose mouths have been robbed of half their teeth at one sitting, with no attempt by the dentist to save any tooth having a complication with the pulp.

I am impelled to protest against the ultra science on one hand, and the wanton butchery on the other.

If the importance of teeth were sufficiently appreciated to demand of dentists a death certificate for each tooth extracted, much mischief would be prevented, for bad dentistry is worse than none at all.

One dentist who, I suppose, is in good standing, told me that his "nerve broach is a forcep," and when I saw how healthy he looked, and how likely to live a long time, I shuddered.

Will the lengthening of our college term give us better dentists, or will it only exclude the young man of small means? Will the young man of wealth, or the one accustomed to close and careful application, be more likely to work willingly over a root canal to obtain cleanliness? Upon which, our greatest student of microbes affirms, we must rely more than upon any antiseptic.

Abroad the term of study is longer than it is here, but they do not, as yet, surpass us in dentistry. One cannot be in the profession long without knowing that dentists do not lack knowledge so much as a willingness to use that knowledge in a painstaking manner for the best good of their patients.

All clouds, however black, have a silver lining, and the most portentous one that ever loomed up before a conscientious dentist in regard to his own, or his brother's work, will yet be dispelled; and the time will come when the dentist who does not live up to the full possibilities of his art will be the exception and seldom found.

## **A Few Points on Taking Impressions of Mouth and Making Dentures Before Teeth Are Extracted.**

By Dr. ALICE JARVIS, Philadelphia, Pa.

In making partial and even full dentures, I have proven it to be practicable to take the impression with the natural teeth in the mouth, complete the denture, then extract the teeth and put plate into place.

Great care is needed in taking the impression. Use plaster always (not too soft) and have impression tray large enough to include all of the teeth. Just before plaster sets in mouth, gently loosen it a trifle, then push up again and allow to harden. I have never had any difficulty in thus obtaining a good impression, and should a few pieces break off, they will be clean breaks, that can easily be replaced.

Take bite in usual way after cast is run, mark teeth to be extracted and carve them out on cast. If I am inserting six front teeth for example, I carve the three out on one side of mesial line, using the other three as a guide for size, expression, etc.

In carving teeth out of cast, carve well up into cast, allowing artificial teeth to set up well under gum, fully one-quarter inch into socket, being very careful not to change the form of the natural tooth at neck in carving cast.

When plate is finished, extract teeth from patient's mouth, being careful not to lacerate the gums, and after having used an antiseptic mouth wash thoroughly for a few moments, put plate into place, and you will have a most elegant piece of work, the teeth going right up into the sockets and the gums coming down over them, as nearly like nature as is possible, and in many cases a vast improvement over nature.

I consider this method very advantageous, as none of the natural expression of the mouth is lost through patient going without teeth for a length of time, and I find that these plates are worn with comfort much longer than when a patient waits from two to six weeks before having plate, after teeth are out. Again, patients are so pleased to come into the office with old teeth in their mouths and go away with new ones. I have had numbers say to me, "Why, had I known that I need not go without teeth at all, I would have come long ago."

Advise the continued use of a good wash such as listerine, or Wam-pole's antiseptic solution, every day for a week or two, and also urge upon the patient the fact that the plate must not be removed except to cleanse.



## **The Natural Principles Underlying the Construction of Crown and Bridge Work.**

By JOSEPH T. HEAD, M.D., D.D.S., Philadelphia, Pa.

*Read at the Twenty-Seventh Annual Meeting of the New Jersey State Dental Society.*

Every tissue or organ in the body has been constructed to fulfill a well defined purpose, and while as in the case of the male mammary gland, its function may have ceased to exist, we should be most careful to be assured that such tissue or organ has become obsolete before we depart from the regular path of Nature.

The Arthur method of permanent tooth separation was based on the theory that enamel had become superfluous as a protection to dentine, and that the maintenance of interdental spaces by the natural contour of the teeth was no longer necessary. The error of this conclusion was soon apparent to those who followed such teachings. Huge contour fillings had to restore the protection previously afforded by the enamel, and the interdental space, through Nature's painful sarcasm, was indisputably proven to be still essential for the maintenance of oral hygiene.

Within the last year the advisability of destroying all pulps after the teeth are fully formed has been advocated, and while it may be true that the pulp is only useful as a builder, it is certainly wise in the light of our experience with Dr. Arthur's teaching, to proceed slowly, until it is proven that the dental pulp does not also possess a nourishing function after the period of construction is past. The lessons taught us by such mistakes will be useful to us in studying the construction of crown and bridge work. Let us strive to learn from Nature, not to remodel her.

**Band Crowns  
Preferable to  
Pin Crowns.**

Scientifically constructed collar crowns are the acme of everything that could be desired or conceived. They are clean, strong, and so natural that dentists are often beguiled into examining them for cavities of decay. The banded Logan crown, the

solder backed collar crown, the Mason crown, with detachable face, and fifty other methods, afford such excellent opportunities for selection, that to mention any hobby of mine in this line would be superfluous. But in applying each or all of these excellent methods, we must never forget, that they are only useful, inasmuch as they conform to the designs of Nature, as outlined by the natural tooth. When the band extends over the cementum and dentine as smoothly and accurately as did the enamel,\* permanence and hygienic comfort are sure to result. No other support is necessary, and the pin when used is merely a factor of safety, and should be so regarded. In the adaptation of the band is involved success or failure. The simple pin crown of long ago, while not so secure as the band crown, afforded fewer possibilities for harm arising from defective manipulation. It is true, that a side bite might split the root to the apex; that constant mastication would eventually stretch the pin, leaving a receptacle for the lodgment of food between the crown and the root. But these were only possible dangers, and were not such glaring perils as those involved in the sharp edge of a badly adjusted band, cutting into the gum and bone each time that the root moves under the pressure of mastication.

However, the evils connected with the band crown are easily avoided with a little care. The dangers connected with the simple pin crown are insurmountable, and there is no good reason for returning to the pin crown, even in its modern form, the Logan crown. The Logan crown, as I have before said, when reinforced by a well adjusted band, thus becoming a band crown, is both beautiful and strong. For temporary or emergency work the Logan crown is invaluable. But to use it for permanent work on a healthy patient is to deprive that patient of the benefit which he is justly entitled to receive from the general advance of modern dental science. No doubt there are many here assembled who can recite numerous cases of Logan crowns so accurately fitted to the root that the cement cannot wash out, so accurately fitted that a side bite cannot possibly split the root, but these statements can refer only to perfect roots, and is it not wiser for us to employ our skill in the production of a crown that can be satisfactorily adjusted to any root whatsoever, so long as that root is firm in the jaw?

**Conservatism  
Required in  
Bridge-Work.**

Bridge-work differs from crown work, inasmuch as it cannot be constructed in absolute harmony with the natural plan of the teeth. Each abutment is compelled to bear more than its natural share of masticating force, and is also deprived of its inde-

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\* Enamel never extends over the cementum. When there is any overlapping the cementum covers the enamel.—*Editor.*



pendent motion, which last is the main defense against shock and subsequent periodontitis. While this tax upon Nature is unavoidable, let us never forget that it is a tax, and let us consider deeply before we presume upon it to the extent of supporting fourteen teeth upon four roots.

When two roots sustain four teeth, or three roots seven teeth, we have imposed a sufficient strain. Two and a half teeth per root is, in my opinion, the utmost that we can count upon with security, and to risk more is to impose a strain that only the most firmly imbedded abutments can possibly undergo with safety and comfort.

Many authorities state that the immobility caused by a bridge is a benefit. It is the experience of some dentists that loose roots may be tightened by placing a bridge upon them. But this, I think, would be of doubtful good result, as the temporary gain of avoiding lateral motion in the roots would be more than counterbalanced by the extra strain imposed upon each root from the additional teeth inserted. In all probability the primary cause of loosening would continue, and the bridge would ultimately become a source of annoyance, by maintaining in the gum a root that the tissues had repudiated.

Last winter I saw a patient suffering from periodontitis around the abutments of a bridge, that a fellow practitioner in an adjacent city had inserted with great care. All remedies failing, the bridge was removed. The two abutments were found to be so loose as to render it most improbable that they could ever be of service. But after a rest of two months under normal conditions they became healthy and firm. Crowns were placed upon them, a removable bridge made, allowing perfect individual motion of the supports, and the patient, up to this time, has been masticating in comfort. This is an extraordinary case. The majority of roots do not rebel under enforced rigidity, but one such instance proves conclusively that the loss of individual motion is to be regarded as a serious objection. The extra work imposed by a bridge on each abutment is a tax that cannot be avoided, but the rigidity in many instances may be obviated by a cantilever bridge, which is fastened on one side, and only supported on the other, or by a removable bridge, and with the removable bridge greater cleanliness is possible.

There is no doubt that a sound tooth at times, may beneficially support a loose tooth. But a tooth that has loosened under the normal shock of mastication, should hardly be expected to grow firm under the greater load incidental to the work involved in sustaining a bridge.

In summing up it may be said that the prolific cause of failure in crown work may be embodied in the phrase, "a band badly adjusted." In bridge-work, in addition to inaccurate band adjustment, add unnatural rigidity, excessive work for each individual root, and increased opportunity for impaction of food.

Let these evils be mitigated or avoided, and success will result, with any of the numerous artistic appliances now in use. Let these evils prevail, and no delicate joint between porcelain and gold, no exquisite contour, no polish can prevent the work from being a source of irritation to the patient and of mortification to the practitioner.

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## Bacteria of the Mouth.

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By A. C. HART, Ph.B., D.D.S., M.D., San Francisco, Cal.

*Read before Pacific Coast Dental Congress. Reported by Clyde Payne, D.D.S., San Francisco.*

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Dr. W. D. Miller was the first to prove that bacteria alone were the cause of decay in the teeth. This, I believe, to be the most brilliant discovery ever made in dentistry. We may justly be proud of him, for dentistry was thus made an honored profession and the title of Doctor became a just one.

Bacteriology is not so difficult to understand. I know it has become loaded with a host of unpronounceable names—thanks to the Germans, who delight in seeing all the letters of the alphabet in a name. It yet remains for America to simplify these terms and perhaps some one will give us a nomenclature more in accordance with American ideas.

If you will remember that bacteria are only vegetables, and subject to like conditions for the growth and development, you will have gone far toward understanding the reason for their different ac-

tion when grown on various media.

They grow in two ways:

- 1st. Budding; division; or Nature's method of growing from slips.
- 2nd. From spores—or seeds.

Like seeds, these spores are very tenacious of life, many withstanding both freezing or boiling for a long time.

The conditions necessary for their best growth are:

1st. They must be kept at an even temperature—the average being 98° F.

2d. They must have a certain amount of moisture.

3d. They must be kept at rest and exposed to little light.

4th. A suitable soil, like albumen, containing earthy salts, and nearly alkaline.

How admirably the mouth supplies all these requirements!

With its high temperature, moisture normally alkaline, albumen containing earthy salts, and conditions for rest, that are simply ideal. Do you wonder at its varied and luxuriant growths of bacteria.

You will remember that at the clinic this morning attention was called to the effect of their growth on different soils. How that when grown on meats they produce alkalies. And perhaps for the first time you understood why meat eaters' teeth are so free from decay. Among the Esquimaux, whose diet is almost exclusively meat, decay is almost a thing unknown. This also explains why carnivorous animals do not have decayed teeth. The street dog that lives wholly on scraps of meat has pearly-white teeth and no decay. But your fondled, petted pug and poodle dogs; look in their mouths? Their breath is nauseating, their teeth loose, irregular and decayed. Do you ask why? Have you not already guessed? Their diet is cake, bread and sweetmeats; rarely do they ever eat meat. These starchy foods stick tenaciously between the teeth, and the bacteria turn the starches and sugars into lactic acid, which dissolves out the lime salts and the albumen matrix of the tooth, thus affording an excellent soil for their further development, and the tooth is soon a mass of decay.

Bacteria when growing on certain Media produces foul gases and other vile products.

**Necessity  
for Cleansing  
the Tongue.**

Of all the organs of the mouth the tongue approaches nearest the ideal conditions for the growth of bacteria.

From time immemorial the coating appearing on its surface has been one of the objective symptoms of disease. This is the cause of the vile breath of many individuals.

Most of this coating may be easily removed by scraping with an ordinary silver teaspoon. Then with a napkin between the thumb and first finger, gently grasp the tip and draw it forward, rubbing the surface of the tongue with a soft cloth on which is sprinkled a little common salt; follow this by a thorough swabbing with pyrozone, three per cent. medicinal (McKesson & Robbins), and you have effectually cleansed the tongue.

It is our duty to show our patients how to do these things. They appreciate these suggestions far more than they do our fillings. Our work is made a success by their efforts. To make the suggestion more forcible, tell them to smell the coating as they scrape it off. It may be the first time they have ever smelt their own breath; that once will be enough; you need not worry, they will clean their tongue regularly.

The tonsils often cause foul breath from becoming covered with bacteria. I have had several cases of tonsilitis, that so simulated the forma-

tion of abscess of the lower third molar, as to deceive, not only an old practitioner of medicine, but also one of our best dentists.

One of the methods of distinguishing various bacteria of the mouth is the liquefying action on albumen. This is really the chemico-vital principle of digestion. By this solvent action they dissolve out the albuminous cement substance and lime salts which form the teeth.

Black claims that teeth are all of the same relative hardness, but hardness is not always measurable.

**The Inter-cellular  
Cement  
Substance.**

Why certain conditions make it possible for bacteria to dissolve out the lime salts and animal matrix at one time and not at another, is something that must be explained. We must know more about the inter-cellular cement substance; must know its chemistry and physiology.

Pathologists, histologists and chemists tell us that it is like albumen or gelatine. And that in some mysterious way it cements the cells together. They have not been able to separate it from the cells, so as to gain exact chemistry, and study under the microscope has not given good results because of the difficulty of differential stainings.

Now, I believe that the bones and teeth are hard and resist decay because of the minute quantity and increased hardness of this inter-cellular albuminous cement substance, holding the bone cells together. That muscle, nerve and tissues of the various organs are soft, and readily decay because there is an increase in the quantity and a softening of this cement substance.

While it may not be possible for Dr. Williams to see the albuminous substance in his specimens under the microscope, or for Dr. Black to measure its various degrees of hardness with instruments, I am quite confident that susceptibility to decay, whether seen in the tooth or in any other organ of the body, is wholly if not entirely due to the *degree of hardness of this inter-cellular cement substance*. And anything that will harden this inter-cellular cement substance and albumen of the cell sufficiently will prevent decay.

Scientific investigation is regarded as important by the people when the returns have a commercial value in the markets of the world. All you have to do is to prove its utility by a practical demonstration. You must show them why, when and how to use it. That this inter-cellular cement substance does exist, and that you can harden it, has already been proven by our chemists, histologists and bacteriologists. The principle of hardening albumen so as to prevent decay is almost as old as time.

I offer this hardening of the inter-cellular cement substance and albu-

men of the cells as an explanation of the action of most of our best antiseptics and germicides, including antitoxins.

**Conditions  
Favoring  
Decay.**

To better understand this principle, let us look at some of the conditions favoring decay.

Age is a great predisposing factor. In infancy and childhood we have present a superabundance of this inter-cellular cement substance and very much softened. I believe this explains the extreme susceptibility of children to bacterial disease.

Pregnancy, a period during which women are extremely susceptible to disease, favors decay of the teeth, because there is a softening of the albumen of the cells, as well as an increase and softening of this inter-cellular cement substance.

The acid condition present is due to the action of the lactic acid producing bacteria on the starchy foods and sweetmeats which form the main diet.

If there is any decay present, the teeth will be sensitive, and soft starchy foods will be eaten because easier of mastication. These foods are very tenacious—lodge in places difficult to cleanse. Thus the bacteria get a chance at this increased food supply, which these bacteria can turn into lactic acid, and we have decay.

As age comes upon us we become careless and do not cleanse our teeth as carefully as has been the custom. We also have a shrinkage of this inter-cellular cement substance. You do not need a microscope to see the cracks that have appeared in the enamel.

Certain diseases, like syphilis, tuberculosis, various contagious diseases, and adynamic fevers, tend to soften this inter-cellular cement substance. Neglect in cleansing properly give bacteria a chance to produce decay.

**Conditions  
which  
Restrain Decay.**

You ask what are those conditions that keep our teeth from decaying. 1st. Anything keeping the teeth smooth so that bacteria cannot lodge. 2d. Anything that will harden the inter-cellular cement substance sufficiently to prevent the entrance of bacteria.

I think that most of you are aware that certain habits, like smoking and the use of alcohol, save the teeth from decay.

There are no class of foreigners that come to this country with better teeth, and keep them so, than do the Chinese. Their diet of salted, dried and smoked foods might truly be said to be antiseptic. Their excessive use of tobacco and tea I am sure serves to harden the teeth. It will repay any of you to examine the teeth of these people, and see for yourselves, their immunity from decay.

You all know that salt hardens tissues. It has been used by man for centuries to preserve his foods. When taken into the body it keeps the tissues antiseptic by its hardening action on the albumen of the cells.

If alcohol will harden albumen out of the body, it will do so just so effectively in the body, and when you get a fellow whose tissues are literally saturated with it, do you wonder that these little plants do not grow well? So it is rare that an old drunkard's teeth decay. They may loosen and drop out from the accumulation of tartar, but rarely does he have decay. He boasts of never cleaning his teeth, otherwise than giving them an occasional swipe with his tongue, and he fully believes in his own mind that cleaning is bad for them, wears them out and makes them decay. Now I am not an advocate of the use of alcohol, far from it, for if there was ever a habit that has cursed mankind, the drinking habit crowns them all. I merely offer you this as a reason why the drunkard's teeth and those of persons who use tobacco do not decay.

A patient of yours, the wife or sister of a man addicted to the use of alcohol or tobacco, comes to your office. Your gold fillings are dropping out—decay is rampant everywhere. She is discouraged and so are you. Her husband, moreover, is tired of paying for the filling of her teeth. She blames you. Thinks it is all your fault. You tell her to clean her teeth oftener. She then shows you a mouth with the gums worn off the teeth in her efforts to cleanse them. She does cleanse her teeth, and tells you so. "Doctor," says she, "I want to ask you a question. You are constantly telling me to clean my teeth, and I do; still they decay. Now, my husband never cleans his teeth, and his teeth do not decay. Why is this?" You are cornered. Talk about diathesis and constitution—anything to evade her question. Have you treated her justly? Have you not told her a business lie? Do you wonder that her husband calls you an old fraud, and the whole profession a class of money-making sharks?

You must answer these questions. Come down to the things people know. Explain your scientific truths so as to be better understood.

**How Nitrate of  
Silver  
Stops Decay.**

It is now six years since Dr. Stebbins recognized and demonstrated to the world that nitrate of silver would control and prevent decay. Others may have known and used this, but they selfishly hid it from the people. What if it does blacken the teeth?

Black teeth are far better than no teeth. But, as Dr. C. F. Allan puts it, "We want some medicine or material which, having the preservative powers of the silver salts, will not discolor the teeth, and which can be used on the anterior as well as the posterior teeth." You ask—have we such materials? Can you tell us any remedies that will save people's teeth and

not discolor them? I think I can. This is why I have brought this subject before you. I found from studying the action of nitrate of silver that it formed with the dentine, broken down enamel and bacteria an insoluble albumate of silver. That is to say, the inter-cellular cement substance about which I have said so much, had become hardened and rendered insoluble to the digestive action of bacteria. *I believe that the ability to harden albumen and render it insoluble to the action of bacteria, is the process by which all known bacteriacides act. That they are powerful in preventing decay, just in proportion to their ability to form insoluble albuminates with the teeth and other structures of the body.*

Surely you have all noticed there is not recurrence from decay around your cement fillings. Have you not often wondered at the reason of this? How do I explain it? By the ability to harden albumen of the tooth on the part of phosphoric acid and chloride of zinc.

**A Method of  
Preventive  
Caries.**

Those of you who are familiar with formalin, know how deadly it is to all forms of bacterial life. It will stop decay in the teeth and not color them. I have been using it for over a year, and I can report nothing but success. The method employed is as

follows:

To stop decay recurring at the margin of the gums, or around your fillings, dry very carefully, then apply twenty-five per cent. pyrozone for about three minutes to thoroughly cleanse. Now apply formalin sol. forty per cent. full strength, containing this for five minutes; then dry thoroughly and melt paraffin and salol over the surface, endeavoring to have the partly decalcified tooth substance take up the paraffin and salol. This preparation I gave to the profession, as some of you may remember, over two years ago, for filling root canals. It is prepared by melting a mixture of equal parts paraffin and salol and then allowing it to cool.

If you are filling a tooth, have your cavity prepared. Harden with formalin (forty per cent.) for five minutes, then dry and coat with varnish of Canada balsam, containing two per cent. of formalin. If it be an amalgam filling, burnish your amalgam into this sticky lining. Proceed similarly with gold and gutta percha fillings.

**Proper Method  
of Cleaning  
the Teeth.**

Now as to cleansing the teeth by the patient. I am a great believer in pyrozone, and tell my patients that if they will use it three times a day thoroughly they will not have much need of my services. I recommend three per cent. medicinal pyrozone, full strength. First, I have them cleanse their teeth with a powder composed of:

Precipitated chalk .....	4 parts.
Magnesia ....	2 parts.
Pulv. orris root.....	2 parts.
Boric acid.....	2 parts.

Sweeten with saccharine and flavor to suit.

I explain how this can be made at home, and insist on their doing it themselves.

For a tooth brush, I prescribe the Prophylactic (medium) with the last two rows of bristles cut off. A tooth brush must not be too large, must be easily cleansed and must clean the teeth. All this can be accomplished with the Prophylactic. One word more about the brushing of the teeth. Tell them not to brush the gums off, but down on to the teeth. Now after rinsing the mouth with a one per cent. formalin sol. which I advise them to use in place of water, when cleansing the teeth, the mouth is ready for the pyrozone. A piece of absorbent cotton is saturated with pyrozone and is rubbed with the finger in between the teeth for a minute. After using the pyrozone, tell them not to rinse out the mouth with water. This holds good for any mouth wash. For a tooth-pick, my preference is one of those thin-bladed gold ones.

When once the people fully realize that bacteria alone are the cause of their decayed teeth, and that it is possible by proper treatment to so harden the teeth that they will resist the solvent action of bacteria, dentistry will have become a profession loved by mankind and to be called a dentist an honor.

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## The Evolution of Gold Crowns.

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By CLYDE PAYNE, D.D.S., San Francisco, Cal.  
*Read before the Pacific Coast Congress.*

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In this day of progress, when nothing seems impossible, and heretofore insurmountable obstacles are overcome by the inventive genius of the people, it is interesting to record the "Evolution of Gold Crowns."

From official data at hand, it is pleasing to note that the first metal cap emanated from this city, on November 4, 1873. At that time John B. Beers introduced a gold crown to restore broken down or decayed teeth. A gold screw is secured in the tooth, so that the head will project above the tooth and the crown filled with cement and then placed in position.



On June 26, 1883, Arthur E. Matteson, of Chicago, introduced an improved method of securing artificial crowns in place to the roots, and in April, 1884, he devised an artificial crown constructed of a compound plate of gold and platina.

The Ryneear seamless metallic cap was introduced in September, 1884, by Moses Ryneear, of New York City. You are all more or less familiar with this crown, and it is needless to describe it in detail; suffice to say that this cap has the shape of the natural tooth upon its grinding surface.

On June 2, 1885, Charles P. Grout, of New York City, introduced a method of obtaining a metallic facsimile of tooth roots on which to fit metallic crowns. The prepared root is enveloped in soft metal, which is forced down below the free margin of the gum, a plaster impression being then taken with the soft metal in place. A metallic cast is then made from the impression. In November, 1885, he also made a combination with the metallic crown, of a porcelain face, the inner side of which is concaved to fit the crown, and which is provided with two or more metal pins and a metal backing for the concaved side of the porcelain face, sweated to said pins, and sweated or soldered to the exterior of the tooth crown. Again on December 29, 1885, he introduced a crown having a divided or split band portion, and a key or clamp applied thereto, for holding the edges of the band together. In February, 1886, he presented another improvement in the method of applying artificial crowns, constructing the crown with a hole or opening in its upper portion and injecting cement into this hole or opening after the crown is in place. August 24, 1886, he introduced a metallic crown, consisting of an inner band portion open at the top and fitted closely to the tooth or tooth root, an outer shell or cap surrounding the band portion and closed at the top to form an occluding surface, and a solder or other permanent filling introduced between the inner band portion and the outer shell and uniting them in one integral structure.

In December, 1886, L. T. Sheffield, of New York City, introduced a metallic crown provided with an ornamental facing of porcelain. At the same time C. P. Grout devised a metallic tooth provided at the front with a flange or lip, and secured in place by turning the flange or lip inward over its edge or margin.

Dr. Charles E. Blake, Sr., of this city, introduced, in December, 1886, a platinum crown upon which is the masticating surface, having the front or labial face covered with enamel, which is united to it, by perforations, in the process of baking.

On November 15, 1887, George Evans, of New York City, devised a seamless tooth crown, having the external conformation corresponding

to the cervical, middle, and occluding third of a natural tooth, to which the metallic crown is to be applied or substituted for.

He also introduced a sectional mandrel for making metallic tooth crowns, on November 15, 1887. The mandrel has the contour corresponding to that of an original tooth. He also devised the process of welding or pressing the crowns into molds or cavities between sectional dies, having a conformation corresponding to that of the natural tooth crown to be replaced.

C. S. Hurlburt, of Springfield, Mass., introduced, in February, 1888, a tooth crown composed of a cap or shell, and an interior ledge to rest on the root, with vertical openings for anchorage.

On August 14, 1888, Charles E. Diehl, of Pittsburgh, Pa., presented an improvement in the manufacture of tooth crowns. A pattern presenting the contour of the crown portion of a natural tooth is first formed, then a shell or casing is deposited thereon by the action of an electric current, and finally the pattern is removed from the inclosing shell. This method has since proven a failure, although ideal in its conception.

On August 21, 1888, A. W. Day and L. A. Rogers, of Grand Rapids, Mich., devised a metallic shell, which conforms to the lingual side of the tooth, and is provided with headed pins, the turned-in parts of which catch in the tooth, in combination with the artificial tooth, which is formed while soft upon the shell and then baked, so as to make them practically one.

On April 5, 1892, George Evans, of New York City, introduced a metallic tooth crown furnished with a non-fusible lining, which covers the grinding or occluding third and is confined to the said third and the immediately adjoining parts of the middle third, to prevent fusion of the exposed parts of the crown in the process of soldering or filling with solder.

The "Hollingsworth" system was devised by Jephtha G. Hollingsworth, of Kansas City, Mo., on December 13, 1892. This system is perhaps used more to-day than any other system that has been introduced. The process consists of forming a number of relief molds integrally with a metal plate and then separating them and mounting them to form core buttons or molds for the dies from which the caps for the crown are made.

On January 16, 1894, James R. Phelps, of Marysville, Cal., introduced an artificial tooth crown consisting of a metal base, band and backing cast in one piece and upon and around the tooth crown in a single operation.

On July 24, 1894, Jephtha G. Hollingsworth, of Kansas City, devised a method of contouring bands, as follows: First, in fitting a band of flexible metal upon the neck or cervical portion of the tooth; secondly, in:

securing the cervical margin of said band in a correspondingly shaped matrix, and thirdly, in forcing into the said band a die corresponding in contour to the crown destined for said band.

Hippolyte V. Des Portes, of Manchester, Va., introduced, on April 7, 1896, an artificial tooth composed of a single piece of metal and having securing pins integral with the body portion of the tooth.

On April 14, 1896, J. B. Wells, of Lowville, N. Y., devised a process of forming a metallic crown which consisted in supporting the tooth, a thin sheet of platinum, soldering its meeting edges, burnishing the same to conform to the surface of the tooth, and then fluxing on metal to build up the tooth about its circumference and biting edge.

Of the foregoing methods, appliances, etc., many have long since been relegated to the archives of the laboratory. Their merits have been fully demonstrated, and it is a self-evident fact that none have filled the requirement of the profession. Theoretically, each seems to be the ideal crown, but practically they are lacking in some vital point. Each of us has had his experience with one or more of these methods and appliances, and will coincide with me, that there has been an apparent deficiency in them all.

It is a remarkable coincidence that the primitive gold crown, which was made in this city, and the subsequent improvements thereon, which have been carefully noted in the foregoing, are destined to be supplanted by a device introduced by Dr. L. L. White, of this city, on November 10, 1896.

The system is ideal and perfection itself. It permits of an absolutely perfect occlusion, a perfect contour, and will without a doubt be used by every dentist who desires a perfect crown. The process is as follows: The operator fits a seamless copper band around the neck of the tooth or tooth root that is to be crowned and trims the said band to accommodate the cervical margin of the gum. You then cut out the lingual, labial or buccal sides of the band, as the case may be, leaving the approximal sides high. The approximal sides are then pushed to contact with the approximating teeth, if any. The band thus prepared gives you the exact circumference of the root, the exact shape of the cervical margin, and the bending of the sides gives you the approximal contour. You then take a wax bite. When cold, remove it—see that the band is in proper position on the tooth and take an impression in plaster. In all probability the band will come with the impression, but if it does not, replace it in the impression. The impression is then poured and the cast articulated. You now have the relation of the band to the occluding teeth, as it existed in the mouth. A ball of soft wax is placed in the band and the articulator closed. You now have the indentations of the occluding teeth in this

wax. The surplus wax is trimmed up to the perfect contour of the tooth. You now have in this band and wax the form of a tooth which is perfect in occlusion because the indentations of the occluding teeth are marked in the wax, the contour is perfect because you have so shaped the wax, and the band gives you the exact shape of the cervical margin and the circumference of the root. Now, if what you have in this band and wax can be reproduced in gold, you have a crown that must be perfect in occlusion, perfect in contour, and perfect in fit. By the method originated by Dr. White, this reproduction in gold is possible, and this fact has been demonstrated by hundreds of practical tests within the short six months of its existence—and its existence has only been made known in this city. It has been enthusiastically received by the most competent members of the profession, and bids fair to revolutionize methods of making tooth crowns.

By the foregoing, you will readily appreciate the fact that crowns can be made seamless, from a model, with as great a degree of accuracy as a vulcanite plate can be made to fit a cast.

I believe that this method will be the means of saving permanently, more teeth, especially molars, than any other practice of dentistry that exists to-day.

In bridge-work, if you have occasion to put in a bridge from an upper right cuspid to an upper second molar, and you wish the abutments, i. e., the cuspid and molar produced by this method, all that the operator has to do, is to fit the band as previously directed, and take an impression in plaster, and these two crowns will be produced so accurately that they fit into every indentation of these teeth. A wax bite is not necessary, because you want a copy of these teeth as they exist. If you choose to open the face of the cuspid, you have an ideal open-face cap, which is seamless and will hug the tooth tighter than it is possible to make an open-face crown by any other method. From the fact of these crowns being seamless, there is no liability of solder getting inside of your band. In fact, everything that is ideal and practicable in gold crowns seems to be found in this L. L. White seamless crown system. The crowns have their original temper, when finished, and are exceedingly dense.

A difficult case of bridge-work which occasionally presents itself, is where patient has lost a central incisor. By this method the other central can be reproduced as accurately as though it were gilded. You now cut the face out of this crown and bridge in the other central. To be sure, all these crowns can be made by other methods. So can you go to Oakland via San Jose. It would be poor judgment to use a roundabout way to obtain results which cannot be as good and takes much longer time. I do not question any operator; I do not question but that very excellent

crowns are produced by other methods, but I have yet to find another method whereby the natural tooth can be reproduced as by this method. I am aware of the general prejudice against seamless crowns, but the crown of which I speak must not be confounded with the seamless stock crowns now on the market, which neither occlude with anything nor fit anything. This crown is made to fit the individual case for which it is intended. Teeth and the relation they bear to one another, regarding their occlusion, length, breadth, etc., are almost as individual as faces, and must be made to order.

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### **Bleaching Devitalized Teeth with Pyrozone.**

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By J. P. PARKER, D.D.S., Santa Cruz, Cal.

*Read before the Pacific Coast Dental Congress. Reported by Clyde Payne, D.D.S.  
San Francisco.*

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Why should we bleach a dark tooth? Nature gives us our teeth with a uniformity of color. With the death of the pulp comes a change, a darkening of the shade of the tooth, in some cases, producing a decided impression on the observer. When meeting a person with nice, clean, white teeth, the observer sees nothing wrong, and the eye is not fastened on any special feature; but let there be any decidedly dark teeth in the front of the mouth and the eyes are involuntarily fixed so that it will require an effort on the part of the observer to refrain from looking too intently in that direction. To have all the features in harmony, the teeth must be in harmony with one another.

It has been the practice of many of our best operators to rid themselves and their patients of a badly discolored tooth by removing the crown and replacing it with an artificial one, thus making it pleasing (?) and giving the patient a tooth that will never be quite as perfect in strength and harmony as that which Nature supplied, as there are few cases where the artificial can be an improvement on the natural.

In bleaching the time consumed, and the inconvenience to the patient, as a rule, is less than in crowning. In bleaching, we make our tooth, root and all, more aseptic, thus making the sanitary conditions of the mouth more perfect; and in so doing, we lessen the chances of

periosteal inflammation. A tooth should always be bleached instead of crowned, unless the crown will look better and be stronger.

I begin the process of bleaching by first placing the rubber as tightly as possible around three or more teeth; then open into the pulp canal, and remove all caries. With a spray of twenty-five per cent. pyrozone reach all the exposed parts. When it is difficult to reach far into the root with the spray, I employ cotton to carry to the end of the canal. One need not fear any serious result in doing this; yet if there is no necessity for doing it, it is well to avoid crowding it through the apex. After continuing this treatment for twenty or forty minutes, close up the tooth, and then in forty-eight hours it will present a great change, usually becoming as white as the others. If it does not, repeat the treatment, and it will be a rare case that will need the third application.

I find it difficult to tell at the first sitting, to what extent the pyrozone has done the work, some cases being much more stubborn than others; and in some cases it is hard to see any improvement at the time of the operation, but the next day brings great changes.

There are two classes of stain which I have observed that are very hard to remove, and I doubt if pyrozone will effect a satisfactory result. The first is a mineral stain, and the second is where the tooth has been stained with oil of cassia or cinnamon.

One writer speaks of pyrozone as injurious to the vital teeth adjacent to the one to be bleached, and suggests covering them with wax; but I never have seen any necessity for this. He also advises cleansing the teeth with alcohol on beginning the bleaching; but I see no necessity for it. Another speaks of pyrozone (twenty-five per cent.) as a caustic; yet it is the most useful of caustics, as it does not destroy tissues. It surely does burn for a time, and yet the tissue will be, in a few hours, as though it never had been burned. This writer also speaks of continuing the operation for three hours in stubborn cases, which seems to me unnecessary.





## New Jersey State Dental Society.—Seventy-Seventh Annual Meeting.

### Discussion of Paper by Dr. Joseph Head.

**Dr. Osmun.** Mr. President, it gives me great pleasure to coincide with the statements made in the paper which has been read by Dr. Head with regard to crown and bridge-work. In my opinion, one great trouble in placing artificial crowns and bridge-work, has been that we have not taken into account the question of leverage. I believe that in every dental operation, whether it be the filling of a root, the placing on of a crown, the putting in of a piece of bridge-work or a filling, or an artificial denture, that is the basal principle. I believe that it is impossible to place upon any root a Logan crown, without a pin, without danger of fracture from side or lateral bite. I believe, furthermore, that—unless it is some root that you cut down—it is impossible to get an accurate fit under the gum around the joint. Furthermore, I believe that the backings that we are now making of porcelain will open a new field in crown work; I think we can get better results in many cases than we have been able to get with gold, and the structure is more natural in color, the backing of a tooth having some effect upon the translucency of it.

Another point in relation to extension bridges: I cannot conceive how it is possible to put on an extension bridge, carrying two or three teeth, or four or five, as the case may be, and expect good results to follow. I believe it is a foregone conclusion that failure must come to such an operation; it is bound to fail.

**Dr. George Evans.** Mr. President, I heard a portion of the paper read by Dr. Head, which is a presentation of those principles of crown and bridge-work that are generally accepted as being proper in practice, and there is not very much for me to discuss.

As a matter of course, the preservation of the pulp of a tooth should always be considered a duty. I have denounced emphatically, in my writings, the destruction of the pulp of a tooth for the purpose of crowning, except in cases where it is impossible to make the operation without doing so, or for the purpose of forming a crown to support a bridge. In many instances where formerly the pulp would have been devitalized we can now avoid devitalizing it.

**Extension Bridge  
Denounced.**

I would like to say a word about extension bridge-work, as it is called; the extending of one or two or more teeth out from one foundation or anchorage, by which great strain is brought upon the tooth that supports the bridge. When a bridge is extended from a tooth on one side of the mouth, and an extension is also made on the other side, the one side will somewhat equalize the force that may be brought on the other; but a piece of bridge-work extending from one or two teeth on one side of the mouth, in a lateral position, and only supported by those teeth on one side, with the expectation that it will bear the force of mastication, is a form of bridge-work that I have reason to denounce. In a very short time the teeth which maintain the bridge are loosened. Take a second bicuspid supporting such a bridge; if a molar is placed on a bridge extended from that tooth, in a short time the bicuspid will be thrown backward and loosened. And if a cap is put on the bicuspid in front of it, in a short time the occlusion of the jaws, coming a little closer on the molars, brings a force upon that tooth which is greater than the bridge was at first supposed to exert upon it, and the result is that the second bicuspid is forced backward and forward in its socket, and the first bicuspid is raised from out of its socket, and in some cases the usefulness of those teeth is destroyed.

In crown and bridge-work we have an agency for the restoration of lost members of the arch that in certain cases offers great advantages, advantages which are found in no other method, but we need to be very careful in selecting our abutments, and very conservative in relation to the adoption of crown and bridge-work, not recommending it in preference to a plate when a plate will better serve the purpose, but studying the interests of the patient in the matter irrespective entirely of gain to us.

On motion of Dr. Sutphen, the paper was passed.

**Dr. Meeker.**

Mr. President, we have with us to-day a practitioner from the Orient, a student who has passed through college, and is now with Dr. Head, and I would suggest, Mr. President, that you ask Dr. Head to introduce her to the convention.



**The President.** We will be very pleased to have Dr. Head introduce the lady.

**Dr. Head.** Mr. President and gentlemen, I have great pleasure in introducing to you Dr. Yasu Nakamura, who has passed her examination successfully, and is going back to Japan to practice her profession in Tokio. She has just received an appointment from the royal palace, and is going to care for the royal teeth there; and it is a very great gratification to us to know that they will have the services of so excellent a dentist in Japan.

The President: It gives me great pleasure, on behalf of the society, to welcome Dr. Nakamura.

On motion of Dr. Osmun, Dr. Yasu Nakamura, of Japan, was made a corresponding member of the society.

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### National Association of Dental Examiners.

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Several sessions were held, during which matters not of special interest to the profession at large, were discussed. At the morning session on August 2, the important subject of preliminary educational requirements for students entering college came up for discussion, when the report of the conference committee was submitted.

**Dr. Donolly.** We have a very short report from the Committee on Conference, and while it was my understanding that the chairman of the committee of each organization was to sign both, and commit the committees of both bodies to the changes, the papers have not been signed, and I will read just what changes have been made.

Rule 1 remains exactly as it was.

Rule 2 is as follows: "The preliminary requirements prescribed by the National Association of Dental Faculties will be accepted by the National Association of Dental Examiners."

Rules 3 and 4 remain as they were.

Rule 5, in the second line, has the word "College" inserted between the words "separate" and "years;" there is omitted from lines two and three the following: "With three months' practical instructions intervening between the course," so that the rule reads as follows:

"Rule 5. Attendance of students upon three full courses of not less than six months' duration, each in separate college years, shall be required before final examination for graduation."

In Rule 6, line 10, the word "to" is omitted, so that the last clause reads as follows:

"That such college must possess, in addition, suitable lecture rooms, a well-appointed dental infirmary and a general prosthetic laboratory, also must furnish in this way systematic instruction to its students."

There are no further changes recommended or agreed upon by the committee.

Since the adjournment on Saturday night and  
**Dr. Faught.** the action of the Faculties regarding the standard of 1884, your Committee on Colleges has been most constantly and actively at work. We have had conferences with the various representatives of the Boards of the different States; also with the representatives of the College Faculties, and we believe that the resolution which we now offer as a substitute is one which is acceptable to the various State representatives and to both the college and the Examiners' Boards. We believe, more than that, that it is the highest possible standard that can be adopted at this time; and we know more, that a resolution similar to this will be introduced this morning in the Faculties Association, and that the resolution will, of course, lie over, and cannot become a law for two years. In order that we may maintain our laws and go on with the work of this association, we offer this resolution as a substitute for Rule 2:

Resolved, That the preliminary requirements of colleges for recognition by the National Association of Dental Examiners for the session of 1897-8 and 1898-9, or until such time as a satisfactory preliminary standard is adopted by the National Association of Dental Faculties, shall be that a student applying for matriculation shall present a certificate which shall be the equivalent of attendance upon the first year of a high school of the State in which he resides, or where no such high school exists, the equivalent of a certificate of graduation from the grammar school of such State, or that he shall satisfactorily pass an examination which shall be an equivalent to these requirements as shall be indicated by his State Superintendent of Public Instruction.

(The above resolution was seconded.)

Did I understand Dr. Faught to say that a  
**Dr. Donolly.** similar resolution to that would be presented in the Faculties Association?

It will be presented this morning, and will go a  
**Dr. Faught.** little further; it will tie the lines a little tighter; it will break up the commercial trading back and forth between the States. While we are aware of the very desirable features that will be contained in such a resolution, yet we do not feel that we have any

right to embody it in our resolution, because we have no right to take what they do and act before they act. This standard, while it is not just as close as theirs will be, will be acceptable for the two or three years which may intervene before the adoption of the one which will be presented this morning in that association. We believe there is not the slightest doubt that the resolution adopted there to-day will go on the calendar and in time will be adopted, but it will take the regular routine time of at least two years before becoming operative. This resolution was not taken from theirs; we formulated this ourselves, and they, knowing that we had this, invited us to a conference with them, and they were surprised to find how very closely our resolution and theirs met. Then they raised theirs to the high school; they only had it at the grammar school grade, and we met them on the graduation from the grammar school to cover those States that have no high school. So that we are in perfect harmony as to these requirements of preliminary education.

**Dr. Donolly.** How would you enforce this rule?

Simply by sending this resolution to each one of  
**Dr. Brown.** the colleges on our list, asking them to subscribe to it, and refusing to put any college on our list who will not subscribe to it.

If the colleges who refused to do so were in the  
**Dr. Donolly.** large majority they would decline to recognize us at all, and we would not be anywhere.

Why not? Where are we now? Our list is  
**Dr. Brown.** simply a recommendation to the State Boards for their guidance.

I will tell you the difference: If we accept the  
**Dr. Donolly.** rules they make after they make them, then we can come in and enforce them, and report the colleges and do them some harm, provided they violate their own standard. If they fail to keep up to their own standard we can do something, but if they fail to keep up to our standard we can do nothing.

According to Dr. Donolly's idea, then, because  
**Dr. Brown.** the Faculties Association have taken down the bars and opened the gates, we are to follow their lead. One of the deans of one of our prominent colleges, in conversation with me a few moments ago, said: "This action, if it is not changed at this meeting, simply means that a man in coming to one of our colleges has to pass an examination as laid down by the rules of 1884. We ask him to write his name; if he can write it he passes the examination; if he can't, why, it is all right, anyhow."

There is the standard—are we willing to accept any such standard as that?

**Dr. Barrett.** I move that the matter be laid upon the table until we have a report of just what they have done.  
(The above motion was seconded and carried.)

As to Rules 3 and 4 we are in perfect harmony.  
**Dr. Chappell.** In Rule 5 the word "college" was put between "separate" and "years." The clause requiring three months' practical instruction was stricken out. It seems that some States could not be governed by this rule, as it would be a direct violation of their law.

It was moved and seconded that Rule 5 as amended be adopted. This was adopted.

The committee appointed to tabulate the returns from the States, desire to present their report as follows:

Fifteen States have returned reports of the number they have examined and rejected as follows:

REPORT OF EXAMINATIONS BY STATES—1896.

State.	No. Exam- ined.	No. Students Passed.	No. Rejected.	No. Gradu- ates.	No. Non- Graduates.	Students Registr'd
Connecticut . . . . .	13	11	2	11	2	11
Indiana . . . . .	0	9	11	69	10	81
Kentucky . . . . .	18	8	10	1	17	8
New Jersey . . . . .	53	37	16	45	8	6
Pennsylvania . . . . .	0	0	0	0	0	282
Rhode Island . . . . .	34	32	2	29	5	32
Washington State . . . . .	13	13	0	13	0	13
Vermont . . . . .	4	3	1	2	2	0
Tennessee . . . . .	18	6	12	0	0	6
Massachusetts . . . . .	214	136	78	0	0	0
Maine . . . . .	12	11	1	3	9	1
South Carolina . . . . .	11	9	2	10	1	9
California . . . . .	12	9	3	1	12	9
Mississippi . . . . .	13	5	8	3	10	5
New Mexico . . . . .	0	7	0	7	0	7
Total . . . . .	415	296	146	193	76	480

(On motion the above report was accepted.)

The Conference Committee again reported, and a lengthy discussion ensued, in which it became evident that the Examiners were unwilling to indorse the lowering of the standard as accomplished by the Faculties Association. Finally Dr. Brown offered the following:

I move the adoption of the following, as Rule 2:

**Dr. Brown.**

Rule 2. The preliminary requirements of colleges to be on the recognized list of this association shall be: For the session of 1897-98 that a student applying for matriculation shall present a certificate which shall be the equivalent of one term attendance upon a high school, located in the State in which he resides, or that he shall pass an examination which shall be such an equivalent, according to such requirements as shall be indicated by his State Superintendent of Public Instruction; and for the session of 1898-99 the requirements shall be as above, except that they shall be the equivalent of two terms; and for 1899-1900 the requirements shall be as above, except that they shall be the equivalent of three terms; and for 1900 and 1901 the requirements shall be as above, except that they shall be the equivalent of graduation.

(The above substitute for Rule 2 was on motion unanimously adopted.)

**Dr. Clump.**

Cannot we go on and adopt the next resolution as reported by the Conference Committee?

Rules 3, 4, 5, 6 and 7 are as read before. As to

**Dr. Chappell.**

Rule 8, which reads: "These rules and conditions shall apply to all colleges, including those now on the recognized list, as well as those making application for such recognition." The Conference Committee recommend the following in place of that rule.

"Rule 8. To be continued on the list of recognized colleges, all colleges must maintain these rules and conditions."

That has not yet been adopted.

(On motion the above recommendation of the Committee on Conference was adopted.)

**Dr. Chappell.**

Then we recommend the adoption of the following as Rule 9:

"Rule 9. To more fully enforce these rules, it is hereby directed that any college violating these rules shall be taken from the recognized list of colleges."

(On motion the above recommendation of the Committee on Conference was adopted.)

**Dr. Brown.**

I now move the adoption of the rules reported by the Conference Committee as a whole.

(Seconded and carried.)



# ORTHODONTIA

## A Simple Regulating Appliance.

By Dr. F. F. DREW, Baltimore, Md.

The case reported in the August number of *ITEMS OF INTEREST* by Dr. O. W. Bedell, recalls a similar case which I treated a year ago. What I particularly like in Dr. Bedell's treatment of his case, is the simplicity of the appliance used, as I think fixtures generally are too complicated and cumbersome.

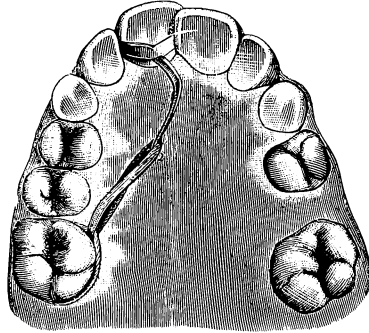


FIG. 1.

Fig. 1 represents the mouth of a young miss—aged thirteen. The centrals lapped very much and her parents were anxious that the teeth be brought into line, as it was a great disfigurement. My treatment was as follows:

First the centrals were separated by wedging with rubber, and were spread, possibly a thirty-second of an inch. An impression and model were then obtained. A band of thin platinum was adapted to the right central and fitted snugly; to this band a bar of gold wire about three-quarters of an inch long was soldered, the end of the bar being bent so as to form a hook. This band and hook was then cemented to the right

central with oxy-phosphate, and when set, a small rubber band was stretched over the hook and then back to the right superior first molar and ligated, as shown on the model. I changed these rubber bands every other day, and at the expiration of two weeks had the tooth perfectly in line, as shown in Fig. 2.

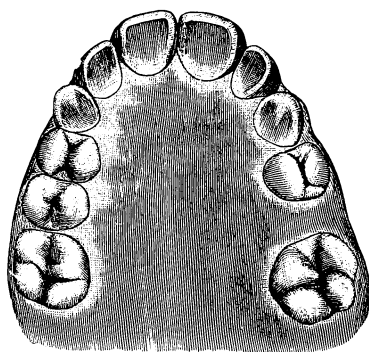


FIG. 2.

After completing the regulating of the case, I swaged a gold plate to fit the palatine surfaces of the centrals, lapping over their cutting edges. This I cemented on with oxy-phosphate, and the patient wore it as a retaining appliance for six months.

I saw her last month and found the teeth in position with no disposition to move.



# Office and Laboratory

Office of Dr. Wm. B. Finney,  
Baltimore, Md.



One would go a great way before finding a better equipped, cosier or handsomer dental office, operating and waiting rooms than those of Dr. William B. Finney, of No. 813 North Eutaw street, Baltimore, Md., whose portrait is seen in the illustrations which show us his home, which he calls "Hamilton Flats."



Dr. Finney is professor of Dental Mechanism and Metallurgy in the Baltimore College of Dental Surgery, the first, and, to-day, the oldest dental college in the world.



Dr. Finney's offices and home are models of all that is attractive and beautiful, and he is verily "Monarch of all he surveys," because the large and well-kept building, as well as everything connected with it, be-

longs to him. The building extends back the length of an entire block. The main entrance is opposite that fashionable thoroughfare, Eutaw street, while the rear entrance is on Linden avenue. The building is three stories high and contains fifty-six rooms. As one enters, the eye immediately falls on a handsome corridor stretching almost the entire length of the house.

The hallway is wide and opens through richly hanging portieres into the front waiting room, the furnishings of which are tasteful and elegant.



From this room the patient steps into another waiting apartment furnished on a more elaborate scale, thence through folding doors to the operating room.

All through the building, from the magnificent and large self-acting plate glass storm doors at the entrance, there is ever something new to greet the eye, but the most delightful surprise of all comes as you enter the operating room, with its soft and almost exhilarating light. That room opens by means of large revolving windows upon an ever running

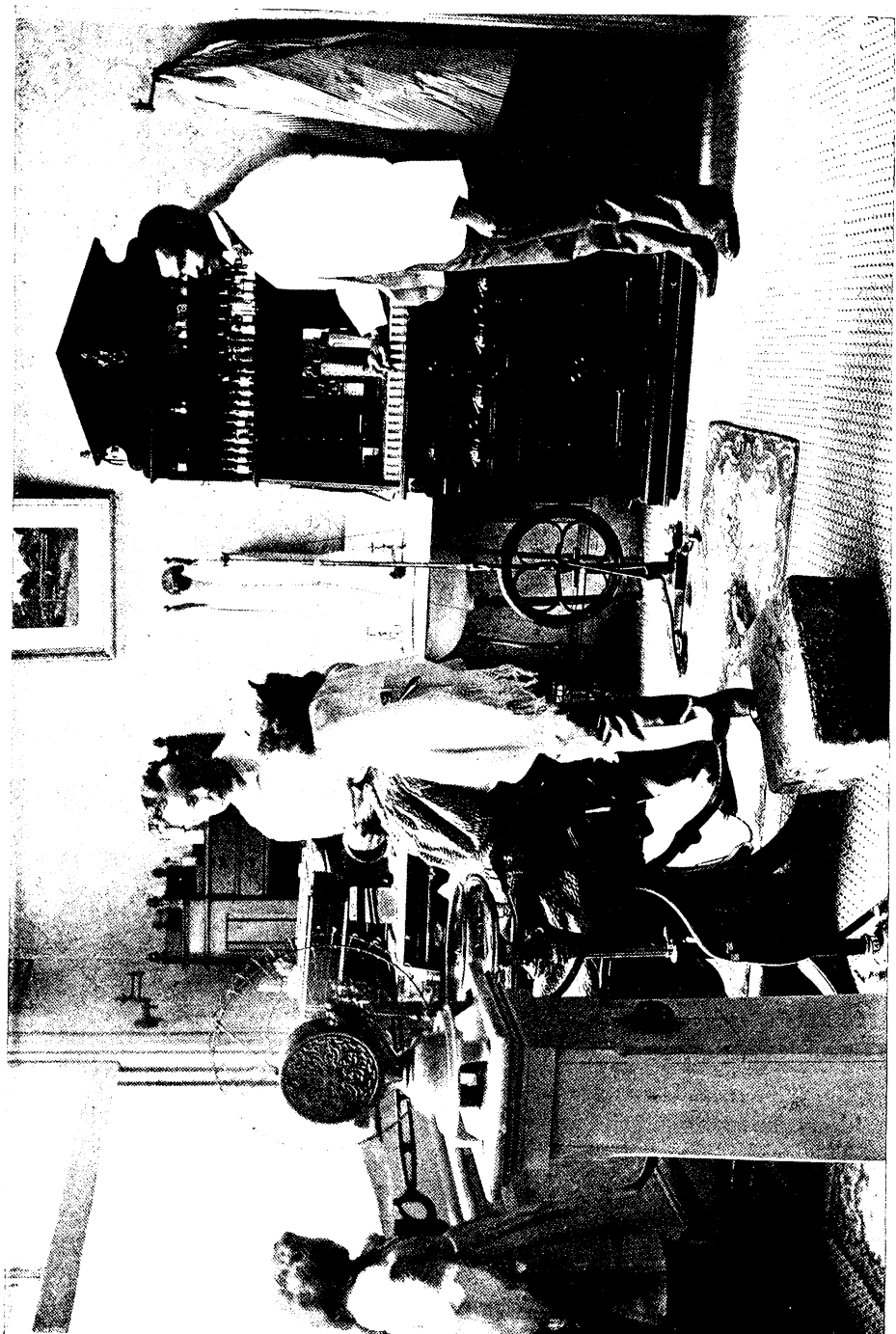
fountain, surrounded by growing plants, ferns and blooming flowers. This is an innovation which lovers of the beautiful in nature and art appreciate.

This fountain, which is shown in one of the illustrations, occupies a large, open court in about the center of the building, and can be seen from almost any section of it. The visitor is reminded more of a horticultural hall than a dental establishment.



The court is considered a great novelty, the walls shading the windows, and providing thereby a soft and delightful light for the dentist. The court is seventeen by thirty-three feet, with railed steps leading down into the centre. The fountain, or pool, holds several hundred gallons of water, and is stocked with gold fish.

Passing from the main operating room to the private office, the visitor comes to a neat stairway of gradual ascent leading to the laboratory, which is directly under the main office. A small dumb-waiter, large enough, however, to carry everything of dental manufacture, runs to the



office above; there a small, perfectly airtight door is placed to cut off from the office any fumes which may arise in the laboratory. The arrangement practically makes the office and laboratory one, though they are entirely separate apartments.

There is a natural decline of fifteen feet in the ground from the Eutaw street front to the Linden avenue front. This has been taken advantage of, raising, as it does, the office floor high enough above the surface of the earth to allow the laboratory underneath. It is a well-



lighted room, sixteen by twenty feet, fronting on the open court. The entire front is of glass, projecting three feet from the office, and produces a beautiful skylight. Along the entire length of this window is a work bench with numerous drawers for keeping of all instruments. What Dr. Finney calls a "gold drawer," built after the style of those used by jewelers, is used exclusively for saving the fragments and fillings, which amount to considerable in a month's time, as the doctor makes a specialty of gold crown and bridge-work.

The motive power of the laboratory is water, of which Baltimore has an abundant supply, and which is considered less dangerous and more reliable than electricity.

The appliances generally throughout this establishment are of the doctor's own design, such as pluggers, mandrils, sealers, gold filling trimmers, etc. A set of hand and electric pluggers combined, consisting of a set of fourteen, are in general use, particularly by the graduates of the Baltimore Dental College. A mandril, self-acting and self-cleansing, is



an ingenious device, carrying corundum wheel, as well as the finest disk. Among other things is a set of six beautifully carved pearl handled gold trimmers, made in sets of two, right and left, and used to great advantage in cutting down the overlap of gold fillings, instead of using the sand paper, so objectionable to many patients. We also find the electric mallet, which was used for years, and is still ready for use, but which is seldom resorted to at the present time, for the reason that after twenty-six years' use of a steel handle Parmly Brown mallet, the doctor can place and condense two fillings with this instrument to one with any electric

mallet. This hand mallet is a curiosity, showing the precision of the blow from force of habit; doing his own malleting, looking at the tooth and striking the blow by guess, the gentle tap, tap of years, has worn a circular depression accurately correct within the circumference of this small hammer, an eighth of an inch deep and not more than a fourth in diameter.

An ingenious contrivance used instead of the disagreeable hum and buzz of the electric fan blowing away one's material (and everything else about the office), is a water motor fan, standing one foot from the fountain spittoon on the left side of the operating chair, which blows a direct stream of air across the chair, fanning the operator and patient, from a gentle breeze to any increased speed. At the same time, it is noiseless and will not blow a light piece of tissue paper from the Allan table directly in front of the chair.

The picture on the easel in the reception room shows Dr. Finney in his uniform. He was for a long time captain and advance officer in the Fourth Regiment, Maryland National Guard, now the crack regiment of the State. Colonel Willard Howard, the commandant, accepted the resignation of Dr. Finney with sincere regret, because he was too valuable a man for the Guard to lose.



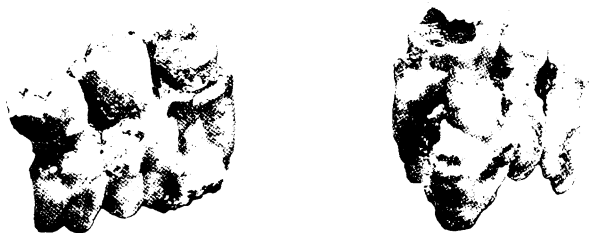
# INCIDENTS OF OFFICE PRACTICE

## Exostosis Complicated with Necrosis.

By H. B. BARTLETT, D.D S., Owensboro, Ky

The accompanying illustration shows the exact size of three molars extracted from the left upper jaw of a woman forty-five years of age.

When I first saw the patient, I found her in a highly nervous condition, and it was difficult for me to make a thorough examination. She reported that she had not slept for three weeks. I found considerable swelling, which prevented her from opening her mouth. I decided to extract the first molar, and did so; the second and third molars came out at the same time.



I found the three teeth firmly united by exostosis. Attached to the roots of the first molar was a large sequestrum of necrosed process. Upon removal of the teeth, a profuse discharge of dark greenish pus flowed from the cavity, in quantity equal to a gill, and of very offensive odor.

The previous history of the case was obscure. The patient reported that she had suffered considerable pain in this region for three or four years, and that for three weeks prior to her visit, had been unable to sleep at night, or to attend her daily duties. She had no recollection of ever having received a blow, and it is therefore probable that we have here an extreme case of the evils which may result from the death of a pulp, and subsequent putrescent conditions.

The usual antiseptic precautions were used, and the final result was good.



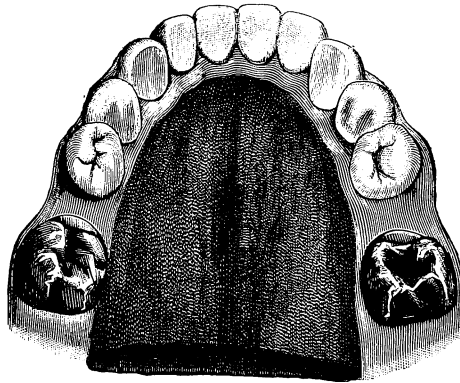
## Treatment of Somniloquy.

By CHARLES NEVITTE GIBBONS, D.D.S., New Orleans, La.

Ten months ago a middle-aged gentleman presented himself, complaining of a trouble for which, at first, I was not very hopeful of finding a remedy. He was a somniloquist, and during his sleep he was a nuisance to all of his family, keeping them awake with his loud and constant jabbering. He was a sensitive gentleman, of refined disposition, and it was a source of great mortification to him to know that he made himself thus objectionable to all about him.



*Fig. 2.*

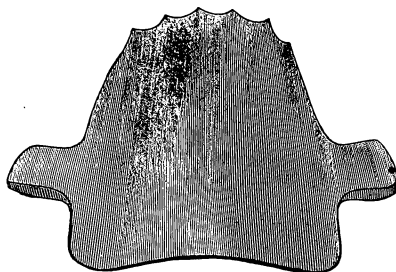


*Fig. 1.*

Upon examination, I found that he had lost both lower sixth year molars, thus leaving spaces which I utilized in the following manner:

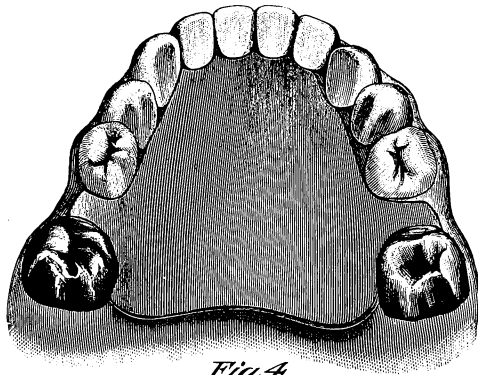
I took an impression of the lower arch and tongue with an impression tray specially devised for this case; the resulting model is shown in Fig. 1. Next I made gold crowns to cover the twelfth-year molars, on each of which I soldered a flange or extension along the anterior approximal surface, as seen in Fig. 2. These crowns were permanently cemented over the natural teeth. I then made of vulcanite rubber a thin plate accurately fitting and resting upon the palatal surfaces of all the anterior teeth, and having projections which would extend between the bicuspid and molars on each side. The plate is shown in Fig. 3.

In use it was placed in position in the mouth with the extensions at each side passing under the flanges on the crowns. The plate in place is shown in Fig. 4, from which it is seen that any effort on the part of the



*Fig. 3.*

patient to raise the tongue is prevented by the fact that the flanges on the crowns stop the plate from lifting at the posterior part, whilst the anterior part is further supported by resting on the anterior teeth.



*Fig. 4.*

The plate was fitted over the tongue so that that organ has sufficient room for comfort, and there is abundant space for the action of the muscles in deglutition; otherwise the fixture could not be tolerated. This is worn with comfort and is not displaced during the night.

The gentleman does not talk in his sleep any more, and he, as well as his family, are well pleased with the result.

## **Successful Treatment for Dry Sockets.**

By DR. T. M. JAMISON, Okolona, Miss.

I am impressed that this is a new subject in dental literature, yet I suspect that it is an incident in practice that is somewhat common to us all. In the *ITEMS* of January last, Dr. J. Y. Crawford gave this subject some attention, and since that time I have treated two cases similar to his.

One was an upper incisor which had become so loose as to necessitate extraction; the second case was an inferior molar with the crown entirely gone, the two fangs being removed separately.

In the first instance, a lad of sixteen, having suffered at times for more than thirty days after extraction, returned to me in intense pain. I found the socket open with no signs of healing. I made an application of iodoform and glycerine which relieved the pain, but as this would recur in a day or two, and no change in the condition of the socket, I thoroughly removed all thin alveolar process, which, I found necrosed. I made several deep incisions in the gums about the cavity, wiping out the socket with iodoform and glycerine. The parts began to heal at once giving no further trouble.

The second case was treated in same manner, with equally as satisfactory results.

I attribute this condition to the non-absorption of the alveoli, and believe that this can be avoided if the thin process is taken out after extraction, when healing of the gums will more rapidly result.

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## **Eruption of Central Incisor in Nasal Cavity, Following Operation for Cleft Palate.**

By R. KEITH COMMON, L.D.S., Stirling, Scotland.

The accompanying photograph shows a remarkable result of misplaced alveolar process in an operation for cleft palate. The patient, a boy of ten years, was operated on twice by Sir George Macloed of Glasgow; first when three months old and again at fifteen months. The fissure which extended through the lip, hard and soft plates, was remarkable for its width and depth, and there was considerable difficulty

in overcoming the tension in uniting the lip. The alveolar process was drawn together, but no attempt was made to close the parts behind as it did not promise to benefit his speech. In a year or two an obturator will be made, and this is expected to give a better result.



In approximating the edges of the process, that part containing the right incisor tooth had been tilted upwards, and of course changed the direction of the growing tooth with the result seen in the photograph.

Soon after the second operation, a small hard nodule was felt in the floor of the right nasal cavity, which was thought to be bone, but proved, after it dropped out, to be the right temporary incisor. The permanent tooth made its appearance only a few months ago, and its eruption was very rapid, taking an upward and outward course, with its mesial edge anteriorly. On removal of the tooth, which came away very easily, its appearance showed that its formation must have been disturbed at the time of the operation: a distinct depression encircles the crown about its middle, giving the appearance of a united fracture.

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### **Persistent Abscess After Extraction.**

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By DR. W. H. PALLETT, Crete, Neb.

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On April 18, 1895, Mr. B., aged twenty-three, called at my office to obtain relief from an abscess caused by the inferior first and second molars of the right side. He said that the trouble dated back about a week, and had been gradually increasing in severity up to the date of my first seeing him.

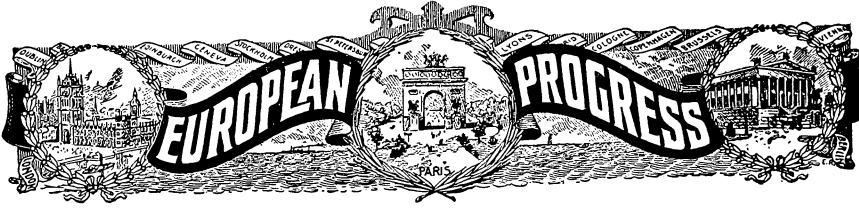
There was considerable swelling of the face, so much so in fact, that it was impossible to make any examination whatever. The patient had only taken a little milk in the way of nourishment for several days. There was almost complete loss of appetite, some headache, and about two degrees of fever. Judging from the patient's condition that a putrescent pulp in one or more of the molars was the cause of the trouble, and it being impossible to get the mouth open, I procured the assistance of a physician who administered chloroform. We succeeded in forcing the mouth open (not without considerable difficulty, however). I was thus able to extract the affected teeth. Contrary to my expectations, no pus followed the extraction. I then made a deep incision with a lance and still no pus. This was disappointing to me. Disliking to make an opening on the outside, I gave the patient a wash containing tincture capsicum, and instructed him to report the next day. This he did, and informed me that during the night the abscess had broken on the inside of the mouth, and fully a teacup of pus had discharged. As a result, he was feeling much relieved, had little or no fever, and had eaten some breakfast, almost the only food for three days. After giving him instructions in regard to keeping the mouth thoroughly cleansed, I told him to report daily until recovery was assured.

On the fifth day (April 23d), he returned with a small soft swelling

near the lower right side of the chin. I again sought the advice of the physician who had previously assisted me. As the abscess was undoubtedly pointing externally, he suggested that an incision be made, as the resulting scar would be much smaller than it would be without surgical interference. This was done, the pus pocket syringed with peroxide of hydrogen, and a tent of iodoform gauze put in to prevent closure. The next day the patient returned and the case seemed to be progressing favorably. However, on April 26th, the patient returned with a swelling similar to the one just described, but located on the right side near the angle of the jaw. This was likewise opened, and after some discharge of pus, it was syringed with peroxide of hydrogen, the solution being forced completely through and out at the first opening on the chin. I continued this treatment for several days, but as the discharge did not seem to lessen in quantity, I now suspected necrosis and probed the canal. I found a small detached portion of bone nearly as large as a dime, and perhaps a little thicker. This was removed, and the canal syringed with a dilute solution of tincture iodine, tents of iodoform gauze were inserted, and the patient was dismissed. The following day there still being some discharge, the above treatment was repeated, but on the fourth day there being no discharge, a dry dressing was applied. This was repeated every two days. By the end of a week the patient had entirely recovered, and up to the date of writing there had been no recurrence of the trouble.

I believe the majority of text-books on dental surgery advise extraction, and give the reader the impression that no other treatment is necessary, but in such a case as the one just considered, this theory is not applicable, and for this reason may prove of interest to members of the profession. My conclusion is this: the pus had evidently burrowed under the layers of muscle so deeply that it could not escape, and the inflammation had been so intense as to cause necrosis of a small area, which kept up the irritation after the removal of the primary cause, the teeth.





## Artificial Substitutes in Resected Maxillae.

By DR. G. HALL, Berlin, Germany.

*Reported by George Randorf, Berlin, Germany.*

Allow me to draw attention to a field where the dentist may be useful to the surgeon in operations on the jaws. A most disfiguring operation

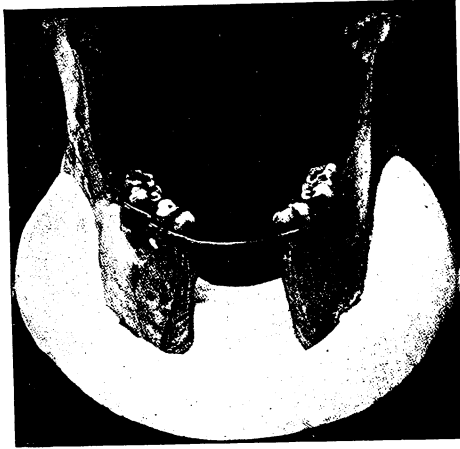


FIG. 1.

is the resection of the lower jaw. Modern dentistry attempts restoration after such an operation by two different methods. The "Ollier-Martin" method supplies an apparatus of rubber, of exactly the size of the removed part, directly after the resection. Such a fixture is attached by clamps or screws to the remaining teeth, or parts of jaw, and crossed by tubes which allow the wound as well as the surfaces with which it is in contact to be rinsed with an antiseptic liquid. It is worn by the patients of the "Lyon Hospital" for eight to eighteen months continually, to be then changed for a smaller removable one.

To this method belong the cases treated by "Gluck-Warnekkros," in the sense of implantation therapy; almost the entire jaw having been resected, a gold apparatus was fixed with screws to the stumps of the jaw and left in, the soft parts being sewn together around the prosthesis.

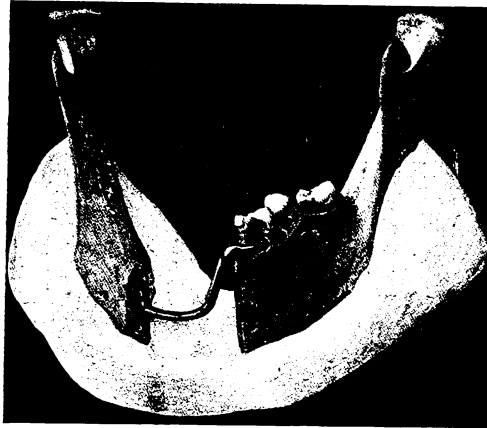


FIG. 2.

The second method, the "Bergmann-Sauer," keeps the remnants of the jaw in a normal position during the healing process, and supplies an apparatus after the complete cure, but before the scar shrinks. By this

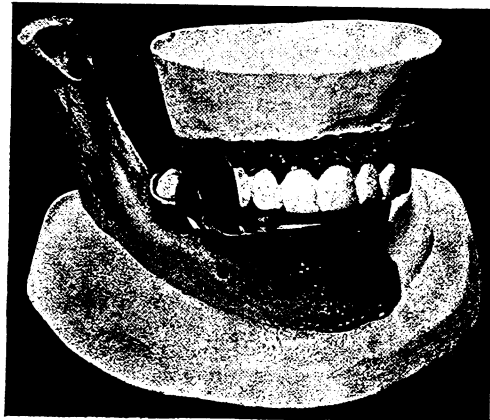


FIG. 3.

method the dental bandages and appliances for the various resections are put on as follows:

For resection from the middle of the jaw, the lateral remnants are fixed by a splint of wire made before the operation and fixed immedi-



ately after it. The material may be gold, aluminum-bronze or tinned steel. The aluminum-bronze (ninety parts copper and ten aluminum), proves best for wire ligatures. With a resection and loss of articulation of one side, an apparatus called "Sauer's Resection Splint," prevents the remaining parts from contracting towards the opposite side. (Figs. 1, 2 and 3.) This apparatus is of wire adjusted to the teeth and bearing a small piece of tin—fixed in a slanting position against the teeth of the

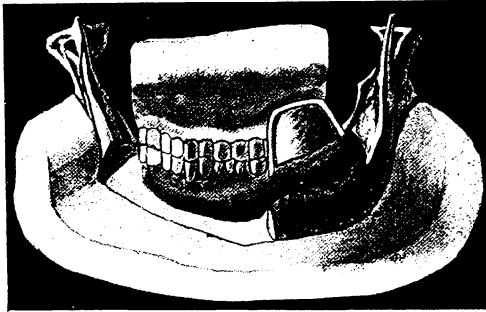


FIG. 4.

upper jaw. It is put on about a fortnight after the operation, and gradually forces the jaw into its normal position through the biting of the upper teeth against the inclined plane. This apparatus which seems so

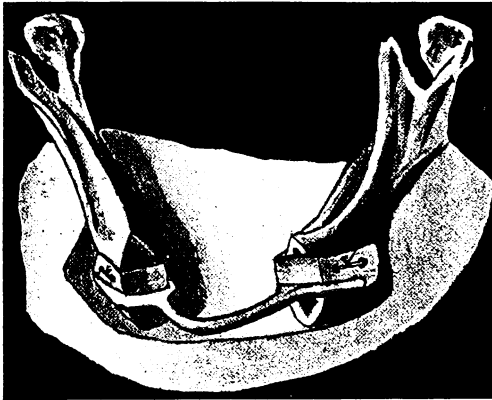


FIG. 5.

insignificant, is yet a most successful device in the after treatment of resections of lower jaws.

Sauer's predecessors, "Suersen and Haun," fixed the stumps with an apparatus similar to their rubber bars for a fracture of the jaw. They also stretched the remnants of jaw healed in a false position. Suersen

put in little bars which could be exchanged; Haun used bars of rubber, of larger and larger sizes. But as the pressure opposing these rubber bars is afforded only by the soft parts of the cheek, it sometimes takes years before the desired result can be obtained. To do away with this disadvantage, many have tried to discover a method applicable to all cases,

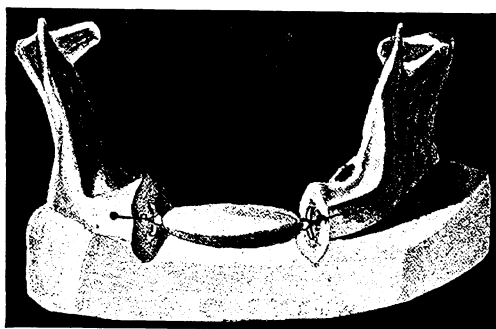


FIG. 6

and especially inciting the activity of the muscles, which produce the right articulation.

Sauer found an ever existing power in the energy of biting, which was

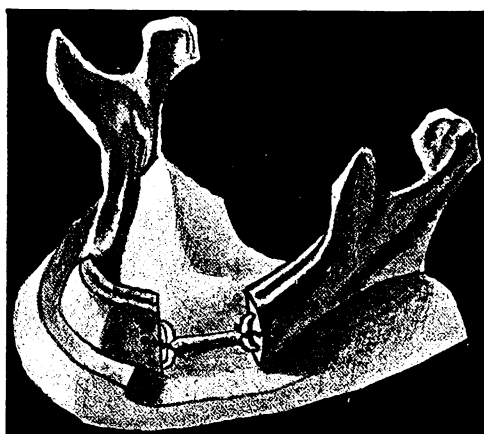


FIG. 7.

made serviceable for this purpose through inclined planes. Sauer estimates this power at half a hundred weight, but has still underrated it.

Three years ago, the operation as well as the dental treatment of such cases underwent an essential change in the Royal Hospital here. For example, if a portion of the jaw from the left canine to and including the last existing tooth on the right is to be resected, a dental apparatus is

made before the operation, carrying not only the inclined plane for holding the left piece of jaw in position, but also an artificial substitute for the part to be resected. (Fig. 4.)

The left jaw bears the apparatus which is to be inserted during the narcosis, immediately after the resection, as soon as the bleeding has stopped. The tongue is tied to the apparatus by a ligature, and the wound, which is always extended along the lower edge of the jaw, closed so that the mucous membrane of the cheek is sewn to that of the bottom of the mouth, underneath the fixture, either entirely, or at least at both ends of the wound.

In the third week after the operation, the ligature in the tongue may be removed and the apparatus daily taken out to be cleansed. About six weeks after the operation, a second apparatus is made, which perfectly replaces the lost parts. In this manner resection of the lower jaw has been successfully treated eight times in the Royal Hospital.

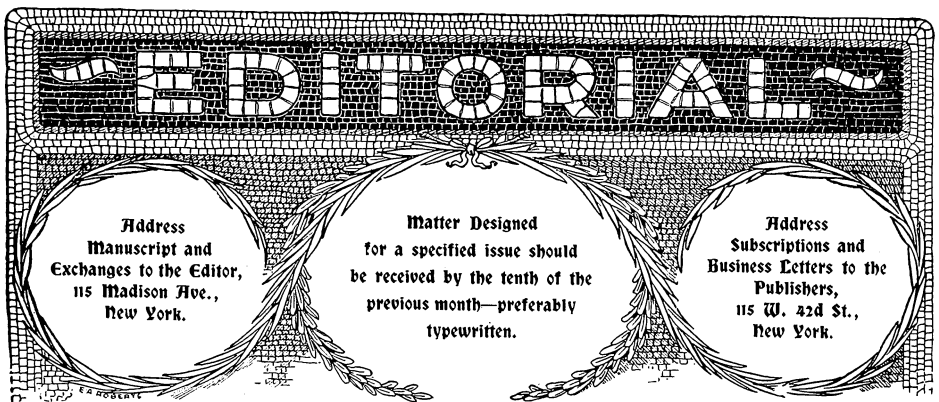
In a ninth case, a resection from the middle of an edentulous jaw, the stumps of the jaw and the tongue were fixed by a Bonnecké wire splint. (Fig. 5.) Our intention being to remove this about the third week after the resection, we made the internal pterygoid muscles inactive by separating them from the jaw during the operation. When the wire splint was removed the jaw almost remained in its normal position, being only drawn a little toward the inside and, following the contraction of the temporal muscle, a little upward.

A broad rubber bar with wing-like continuations toward the stumps of the jaws, and joined to the plate of the upper jaw by spiral springs, was put in directly after the removal of the wire splint, and through it the chin received the support wanting before.

Instead of the Bonnecké splint with clamps of tin surrounding the bone, it is as well to give the splint sufficient width to serve as a prop for the chin, in order to fix it by means of a two-pronged fork inserted into the soft mass of bone, and a ligature of wire through the bone. (Fig. 6.)

For smaller lateral resections in edentulous jaws this pronged fork is best left in the healing wound. (Fig. 7.)





## Four Classes of Dentists.

By analysis it may be discovered that instead of two classes of dentists, as commonly supposed, Professional men and Quacks, there are really four; viz.: The true Professional man; the Quack Professional; the Professional Quack, and the Quack.

### **The True Professional Man.**

The true professional man, in the highest and noblest sense of the words, is a *rara avis*. He begins practice just as the true minister of the gospel takes up preaching. He is prompted by a love of his work, and a love for his fellow man. That he earns a living by the fees which he obtains, in no sense detracts from his attitude of being a missionary. He must live, that he may continue his mission. At times he receives high fees. Indeed such men receive the very highest fees, for the people are not all fools, and merit will eventually be recognized, and its reward cheerfully given. But the professional man, while exacting large fees from the rich, takes smaller ones from the less wealthy, and perhaps nothing at all from the needy. But even in his treatment of the very rich, he acts in a professional manner. He has in his own mind a fixed valuation for the service rendered. If the patron can afford this maximum sum, it is demanded. But if the next applicant for a similar

service should own ten millions instead of one, the fee would be no greater. When a patient is entrusted to his care, the thought uppermost is not, "How much can I make out of this patient," but, rather, "How much good can I accomplish; how much comfort can I afford to this sufferer?" In all services rendered the highest standard is ever before him. Whatever method promises the most lasting benefit he pursues without regard to time, money, or personal convenience. Many men fill teeth with amalgam, and preach the great advantage of using this material in preference to gold, who adopt such a course from laziness, and they write their articles to quiet a troublesome conscience, like the coward in the dark, who held one of his hands with the other trying to believe that he was not alone. Such a man is not truly professional.

The ideal professional man is ever forgetful of himself, when to consult his own interests would be to ignore those of his patients. Above all things he does not advertise. He does not advertise in any form whatever. The commercial mind, accustomed to advance in business prosperity, largely through advertisement, cannot understand this characteristic of the professional man, and the question often is asked, in puzzled tones: "Why are professional men so stupid; why do they have this prejudice against advertising; why are they not willing to announce their skill to the world; why do they leave the advantages of advertising to the quacks?" The reply is that the essence of advertisement is *bragging*. It is bad enough to announce that one sells better wares than his neighbor. But to state in the public prints that one has more skill than his professional brother is an unpardonable egotistic self laudation, abhorrent to the finer instincts.

The true professional man then, is that man who is especially adapted to all the demands of his calling, both moral and mental. He has ever prominent in his mind the best interests of his patient, of his fellow practitioners, and of his profession which, by every act, he endeavors to lift to a higher plane in the esteem of the community. He conducts himself at all time so that his patrons place themselves, their wives and daughters, in his care with confidence in his integrity, and faith in his skill.

In New York City there resides one dentist who represents the highest type of the professional man.

**The Quack  
Professional Man.**

Among those who claim to be professional men will be found men who are professional in varying degree, until at the opposite extreme we find the quack professional. The quack professional, is like the crow who daubed himself with white paint and flocked with the geese, that the farmer might not suspect that he had one eye on the growing corn. This man is in dentistry for what there is in it. He poses with the professional men because perhaps by education and social position he naturally desires a clientele among the higher classes. He has no wish to work for the poor. It is the purse of the millionaire which is his constant aim. Such a man recently told a young man: "You cannot afford to have your teeth put in order." In desperation the young man sought advice elsewhere and cheerfully paid two hundred dollars to the gentleman who saved his teeth. Another boasted in a dental society meeting that he was "Not in dentistry for the good of his health," and the applause which greeted the remark proved that there were many present who had no very high estimate of professional rectitude.

While posing as a true professional man, the quack professional is his direct opposite in the matter of advertising. He does not advertise in the public prints. He is too shrewd for that. He knows the Code, and is very careful never to overstep the bounds. But one may advertise in many ways, not specifically interdicted by the Code of Ethics. This man, unlike the true professional, is always *bragging*. He never loses an opportunity to explain how much greater he is than his fellows; how much more skillful; how many discoveries he has made; how many methods devised; how many instruments invented; and in short how very much indebted to him is all the rest of the dental world.

He also understands how to use printer's ink. He gets printed advertisements without paying for them. The chief object of advertising is to increase business. Consequently any use of the printer's art which accomplishes this end is advertising, however cleverly concealed. Indeed in these days, when advertising has grown to be a special study, the concealment of the advertisement is supposed to be the highest art. So our quack professional, our crow flocking with the geese who do not observe the black feathers beneath the white coat of paint, usually pursues some specialty, or pretends to do so; generally he practices everything, "from

fillings to false teeth," but announces that he is especially successful in one line or practice. He writes many learned theses, some of which may be actually valuable additions to science, which fact adds to rather than detracts from their value as advertisements. His paper is usually read before a dental society, at which the author has a fine opportunity to pose as the special disciple of the methods advocated; next it appears in the most widely read journal. Would it not seem that this is sufficient? It is not, as viewed from the standpoint of the quack professional. He is not yet sure that it has reached those places where it will do the most good; therefore he orders one or two thousand reprints, and these are industriously distributed over that field from which he garners his corn. Of course it is not intended here to state that all men who distribute reprints, are of this class. Many do this, as they do other work, without thought of self. But there is a little sign by which the pamphlet of the quack professional can always be detected. At the end of the last page (if not on the first page of the cover) appears *his office address*. He is not willing that the reader should have any difficulty in finding him. When next you receive a reprint, bearing this little ear mark, think of the pamphlet as white paint and look for the crow.

Of this class there is a conspicuous example in New York City, another in Chicago, one in the far West, and one in the South. All have national reputations attained by 'industry.'

**The  
Professional Quack.**

The professional quack is a miserable sort of fellow. He takes a notion that he would like to be a dentist. He has little or no education, but in these days that is no obstacle, providing he has a couple of hundred dollars. Any dental college in the United States will accept him as a student (*vide* proceedings National Association of Dental Faculties). He worries along through college to the examination period, and this he passes, because he wears long white cuffs, and knows how to write a fine legible hand with a well pointed pencil. So he gets through and is awarded a diploma. He does not send that pair of cuffs to the laundry, but uses them at a State Board examination which he passes with the same facility, and with the same lack of knowledge as when going through college. Thus he obtains his license. The college and the State Board have done all that they could for him; they

have launched him. But thrown upon his own resources he finds that he has none. So one day his room rent is due, and his lunch ticket is punched full of holes, and if he ever heard any lecture on the subject of upholding the dignity of his profession, or if he ever made any promise to do so, he forgets it all. He hires himself to a quack and becomes one of the "professors" in a "Cash Dental Parlor." Poor devil, is it his fault? Of course he ought to have taken a position in a carpenter shop, if he had any mechanical skill, or perhaps in a planing mill, or machine shop. But his little leaning toward mechanics made him imagine himself fitted for dentistry, and when he applied for admission into college *the professors did not undeceive him*. Perhaps a college which only accepted high grade, well educated, refined men as students, would not declare large dividends to its stockholders, but what a work its graduates would do in the world!

Of professional quacks (who, mind you, are only quacks until they get a start), there are hundreds in New York, and thousands about the country.

The  
True Quack.

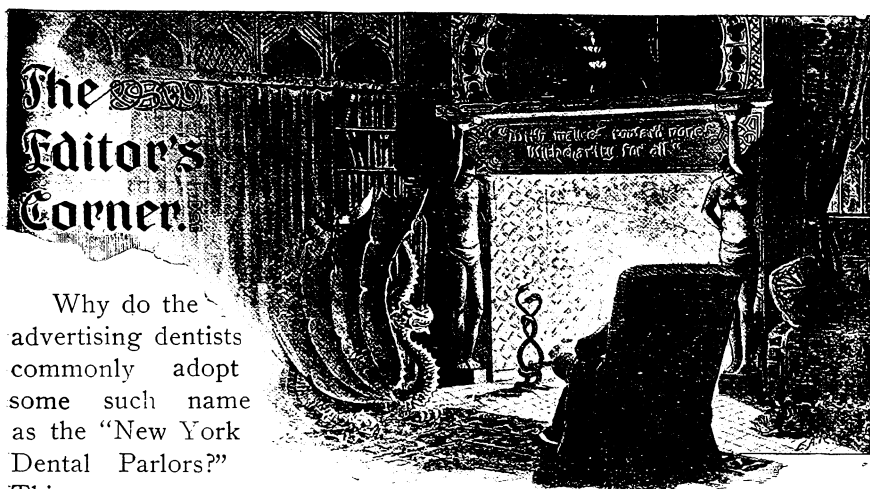
The simon pure quack, when you come to know him, may not be half a bad fellow. Of course he is not a professional man; but then he does not pretend that he is. All he asks is permission to do business in his own way. And, strangely enough, the very laws which have been passed to elevate the profession (what a pleasant phrase that is as it rolls off the tongue) and presumably to suppress quackery, have had exactly the reverse effect. The quack is freer to go and come to-day, than your most cultured professional man. Suppose we prove that? At the present moment an old practitioner is intending to leave the North because his health demands a warmer climate. He probably will settle in Texas, *if he can remember enough of what he learned at college to pass the Texas Board*. He has a chance to dispose of his practice to a widely-known dentist in New England. *It all depends upon the success of the latter with the New York State Board*. Thus the real professional men are hampered, or else confined to practice in one State. How with Mr. Quack? In January he opens a place of business in New York. In February he starts a branch in Philadelphia. In March he opens another in Boston, and in May he begins business in Chicago. He passes *none* of the State Board examinations. Why? *Because he is not practicing dentistry, he is*



*only doing business.* His staff of operators are the professional quacks, the poor devils whom the colleges have turned out as dentists, and who have been licensed by the State Boards. He can find dozens of such men in every large city. Consequently his sphere of action is limited only by his capacity for managing a concern with many branches. In short, the quack is merely a man of business, taking advantage of the opportunity which the wise men in the dental ranks have afforded them by enacting laws, which enable them to run shops, in which all the operators have been declared legally qualified. He may not be a dentist at all.

Of this class there are hundreds—and more start in business every year.





Why do the advertising dentists commonly adopt some such name as the "New York Dental Parlors?"

This query suggests a line of thought

replete with possibilities. In these days of civilization medical attendance of the highest class is afforded to the poor. Hospitals exist in all communities which reach the dignity of being classed among the cities. In metropolitan centers hospitals and infirmaries are numerous, and the medical men who give their services are usually the most skilled practitioners in the communities. These facts are tacitly admitted and are well known to laymen, and especially to those who cannot afford to pay high fees for service. The highest praise which could be given to any physician reached my ears yesterday. An Irish woman pleaded for assistance in paying her rent, explaining that her husband was in the hospital having his eyes attended. "And do you know Doctor X.?" asked she. "Indade, now, he's the foine jintilman. Do ye know, he attinded my old man wid the same tinderness as if we were quality folks, payin' twinty dollars an hour."

**Fraudulent  
Dentists'  
Advertisements.**

That the common people have come to know that the highest skill is obtainable in institutions, explains why advertising dentists assume the names in common use. It is with the intention to deceive.

It is meant that the patients should believe that their places are similar to medical hospitals. The truth of this statement is becoming more patent every day, as the unscrupulous advertisers grow bolder in making their announcements in the public prints. In substance (being quoted from memory), here is an advertisement which occupied

half a column of large type in one of our Sunday papers during the summer.

"Our establishment is now admitted to be the most scientifically equipped in this city. We are at last able to announce that every department is under the direct supervision of a Professor of Dentistry making a specialty of his particular work. Prof. A. in charge of filling teeth with gold. Prof. B. in charge of filling with other materials. Prof. C. in charge of crown work. Prof. D. in charge of bridge work. Prof. E., artificial teeth. Prof. F. regulating (or straightening) teeth, and Prof. G., *late dean of the faculty of the Eureka Dental Association*, now superintendent and dean of our faculty, and oral surgeon of our institution."

Could anything be less disguised? Could any fraud be more audaciously announced?

But New York City is not alone the base of operation for this class of charlatans. Here are three advertisements clipped from the *Pittsburg Post*:

"For forty years the colleges of Philadelphia and New York have cared for the teeth of thousands. The same opportunity is offered you at the Pittsburg Dental College, 711 Penn Ave."

"Personal. First ten days of October special rates on all dental work at Pittsburg Dental College, 711 Penn Ave."

"Wanted. You to bring this with you and secure ten per cent. discount on dental work done at Pittsburg Dental College, 711 Penn Ave."

No such college appears in the list of the National Association of Dental Faculties, nor in that of the National Association of Dental Examiners. Is this a firm of advertising dentists?

The following clipping has been going the rounds of the press of the West, and is a fair sample of "dentistry as she is taught" in the public prints:

**Education of the Public Through the Press.** "The progress in the art of dentistry has been greater than is generally known," said J. E. Lamb of Boston to a St. Louis *Globe-Democrat* man. "You can see from the swollen condition of my right jaw that I am suffering the torments of a throbbing, thumping toothache, and, though I was advised by my dentist at Boston not to have my tooth pulled, I got up this morning from a sleepless night, thoroughly desperate and determined to have the unruly member plucked out. But when I applied to one of the most eminent students of St. Louis to perform the operation, he, too, after examination, advised me not to have it taken out."

When he learned that I was nearly 50 years old he told me that I would have to suffer only two or three days more and the nerve would die of its suffering, my pain would entirely cease, and I would have my tooth

preserved intact. The discovery of the death of tooth-nerves with advancing age is only two or three years old, but in that time millions of teeth have been saved. Formerly, when a man with the toothache went to the dentist's office it meant either that the tooth was unceremoniously jerked out, root and branch, or the sufferer was subjected to a long and painful operation of plugging. The better class of dentists have ceased nearly entirely to pull the teeth of men and women nearing their climacteric, as they know that the aches are but the last expiring efforts of the nerves to perform their functions. A curious fact in connection with this kind of toothache is that cold water, instead of intensifying the pain, as it usually does, actually soothes it. Another important advance in dentistry is the method of completely sawing a tooth in two and joining the pieces together with a small gold screw. When a decayed speck or streak makes its appearance in a molar now the dentist who knows his business will neither pull the tooth out and substitute for it one of his own make nor fill the hollow with gold to preserve it, but he artfully saws the top of the tooth off close to the gums, and, after thoroughly scraping and cleansing the decaying part, welds the two pieces together as firm as before the operation was done."

The above is forwarded by Dr. Wm. G. Ashton, of Milbank, S. D., and with it he sends a letter in which he says: "An editorial friend of mine seemed inclined to doubt my knowledge of recent improvements in my profession because I labeled the inclosed article 'nonsense.' Possibly we are to blame, inasmuch as very few dentists dare to appear in the columns of a newspaper as educators of the public, but leave that important field to the quacks. I would like to learn the name of that dentist in Boston, and of the eminent student in St. Louis who advocate these ideas. To the dentist, of course, this article appears to be rubbish, but to the public it is quite sensible. Cannot a plan be devised whereby the ignorant may be taught enough so that they may be able to discriminate between capable dentists and quacks? This question has been too long ignored by our profession; it should be seriously considered at our State and National meetings. You have placed the *ITEMS OF INTEREST* at the head of all monthlies for dentists. Can you not suggest something in the direction of education of the public?"

At the present time it would be very easy to do something practical in the direction of teaching the people through the public press. In all of the large cities the Sunday newspaper has grown to such dimensions that the editors are at their wits' end for matter. If the principal local society in each large city of the Union would appoint a committee, whose duty it should be to prepare a series of articles on dentistry, there would be no difficulty whatever about having them printed. These articles

should be read before the society after the committee have prepared them, and having received approval, they should be published as emanating from the society. This would give them weight in the community, and the more intelligent would read them to advantage. Such articles appearing in important papers would be widely copied. There are other channels whereby papers in smaller towns could be reached more directly. If any State society will prepare such a series of articles, and authorize their publication, this magazine will undertake to have them simultaneously published in five hundred newspapers throughout the United States.

**A Few  
Practical  
Suggestions.**

Dr. S. L. Walton, of San Jose, Cal., claims that broken nerve broaches can be easily removed from root canals, after a dressing of twenty-five per cent. pyrozone applied on cotton, has been left in the canal for a few days.

Dr. C. H. Bird, of Troy, N. Y., writes as follows: "A very simple crown for bicuspid and molars may be devised when the palatal or lingual walls are lost. Fit a band of pure gold plate, narrow enough along the buccal wall to show the natural face of the tooth, and burnish accurately over the edges of broken enamel, along the standing wall at the approximal sides, shaping the rest of the band for a good contour, turning the edges over to form an undercut. Set this with cement, and before the cement sets fill with amalgam, to form the occlusal surface."

Dr. Lindley H. Henley, of Marshall, Texas, sends the following suggestion in relation to obtaining perfect occlusions: "Nine-tenths of all failures with artificial teeth are probably the result of inaccurate bites. I believe I have a plan which obviates this difficulty. Having obtained an accurate model, I cover it with a thin sheet of rubber, and vulcanize it just enough so that it will retain its shape. This plate is partially polished and my teeth are set up on it and can be tried in the mouth without danger of subsequent change. The teeth are thus set exactly as wanted for proper occlusion and to restore facial contours, and the piece is flaked and fresh rubber packed in and vulcanized to unite the plate with the teeth."

An advantage of this method, not mentioned by Dr. Henley, is at once apparent. Where it is desirable to use plain teeth and pink rubber, the trial plate could be made of red or black rubber, and so trimmed that the pink rubber at the top of the artificial gum would be supported by a narrow rim of the stronger rubber.



## **American Text-Book of Operative Dentistry.**

In Contributions by Eminent Authorities. Edited by EDWARD C. KIRK, D.D.S. Illustrated with 751 Engravings. 800 pp. 702. Lea Bros. & Co., Philadelphia and New York, 1897.

Six chapters of this work have been written by **Louis Jack, D.D.S.** Dr. Louis Jack, one of the ablest of our teachers of operative dentistry. As one reads his fluent passages it is a great pleasure to be able to approve of so much, and to antagonize so little of what he has to say. His opening chapter, "The Examination of teeth preliminary to operation—methods, instruments, appliances, recording results, etc.," makes the student at once feel that he is at the threshold of the operating room, and with a bound at the side of his first patient seated in the chair. His advice as to the attitude of the body of the operator is of such value that many successful practitioners would be greatly benefited by following the recommendations there given. The details for a proper examination of the teeth with various means to be employed are carefully given. The chart record is worthy of especial note, because of its great value, and because it is used by so few practitioners. Its usefulness can only be appreciated when it is used for every patient. We next come to Chapter 12, "Preliminary preparation of the teeth—removal of deposits and cleaning of the teeth—wedging—other methods of securing separations—exposure of cervical margins by slow pressure, etc."

The only adverse criticism that can be made is that Dr. Jack says too little on the subject of cleansing the teeth, both by the operator and by the patient. In a work of this character an entire chapter could be spent with great profit upon the prophylaxis of the mouth. Nothing tends to give a better index to the real character of a dentist than the manner in which, and the amount of time he devotes to, cleansing the teeth. Under separating the author has omitted mention of the more recent devices introduced for the purpose of obtaining immediate separation, such as the Gillette, Ivory and Parr separators.

Chapter V. treats of "Preliminary preparation of cavities—treatment of hypersensitive dentine by sedatives, obtundent, local and general anæsthetics—sterilization, with a brief consideration of the physiological and therapeutic action of the medicaments used." The main portion of this chapter is taken up with the subject of cataphoresis. The chapter is praiseworthy as a whole, but we cannot indorse the style of rheostat selected by the author as productive of the best results. There is some difficulty in criticising a chapter on this subject, which is constantly presenting new phases as investigations progress.

The next chapter written by Dr. Jack treats of "Exclusion of moisture—ejection of the saliva—application of the dam in simple cases, and in special cases, preventing difficult complications—napkins and other methods for securing dryness." It is an unfortunate condition of affairs which compels the author to assume an apologetic tone for advising the application of the dam in some cases at the commencement of work. It is hoped that it soon will be considered malpractice to do anything to any tooth without first adjusting the rubber dam. It is rare indeed that this is impracticable. Like the article on separation, Dr. Jack clings to old style clamps, and pays no attention to those of more modern and improved pattern.

The following chapter is headed "The selection of filling materials with reference to character of tooth structure, various oral conditions and location, depth of cavity and proximity of the pulp—cavity lining, with its purposes."

Dr. Jack has given many years of study to the selection of filling materials for different characters of teeth. We indorse every word in reference to the use of gold. We must, however, differ from him on the subject of tin; for years past a few prominent men have kept bewailing the fact that tin foil is not used more often for filling teeth. A little careful investigation has shown that many operators who began to use tin, lived to regret this when they were forced to replace fillings that had become agents of destruction, instead of the salvation of the carious teeth. We cannot agree with the author's preference for oxychloride of zinc for root canals and pulp chambers. We have never discovered any offensive condition about oxyphosphate fillings placed in a properly cleansed pulp chamber, when the canals have also been properly cleaned, supposing, of course, that a good preparation has been used and that it has been properly mixed. We also must criticise the use of oxychloride of zinc as a temporary filling for sensitive dentine, as being *al ays* a menace to the life of a pulp. This method is especially to be condemned, because it is generally used in teeth of young people where the vitality of the pulps *should be preserved*.

The remaining chapter contributed by Dr. Jack concerns "The conservative treatment of the dental pulp." He has long been known as an authority on this subject, and this chapter compares favorably with almost any other in the entire work. It will bear the most careful attention of any and every practitioner. There is one adverse criticism to be made. No attention is paid to different valuations to be placed upon the preservation of the pulp of a young person, and one who has long before reached the age of puberty, when the dentine is thoroughly consolidated and when often for prophylactic reasons the future health of the pericemental tissues would be far enhanced if the pulp were removed and root canals aseptically sealed.

(To be continued.)

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### True to Themselves.

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A Psychological Study by ALEXANDER T. C. SKENE, M.D., LL. D.

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F. Tennyson Neeley, New York, Publisher.

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Another medical man has entered the realm of fiction. "True to Themselves," from the pen of the celebrated Brooklyn surgeon, is indeed, as indicated in the title, more of a study than a story. It is an admirable treatise of an important aspect of the marriage question, disguised in the form of the so-called "purpose novel" of to-day; but the disguise is easily pierced, the result being quite analogous to the sugar coated pill, the moral medicine regurgitating as soon as the thin coating of sugar dissolves, and leaving "a taste in the mouth."

As a story the book is amateurish in the extreme. The plot is flimsy and the characters are mere automata, which make their entrances and their exits like the actors in a circus ring, at the crack of the whip of the ringmaster.

As examples of this fault the following incidents from the story may serve to show the fitness of the criticism.

Young Dr. Douglass is enamored of a charming girl named Jessie, and after receiving his diploma, visits the section of the country where she lives that he may enjoy walks along the country roads with his sweetheart.

"On one of these walks a tall young man, coming from a field hidden from the road by the bushes and a hedge, saluted Jessie in a familiar way, and asked if she would walk with him to see a favorite piece of his



hunting ground." Jessie declines, the young man becomes insistent, and then insolent, whereupon Douglass interposes, with the result that he is compelled to thrash the interloper.

Thus a character is abruptly introduced, has a quarrel with the heroine, and is whipped by the hero before the reader is enlightened as to his identity. That the son of a wealthy land proprietor should venture to invite a young woman to walk with him, while she is already walking with another man, a stranger to himself, is highly improbable, even though he be the brute which the reader subsequently learns that he is.

This encounter is narrated on page 120. On page 125, Lumsden, the young laird's name having been disclosed by this time, enters the scene again with equal abruptness, rushing from the woods once more when Jessie and Douglass are together, and without warning, or seeming provocation, fires a pistol at Douglass in true melodramatic style, whereupon, following all stage traditions, and evidently seeking the applause of the gallery, Douglass, although a bullet has passed through his wrist, "like a wounded tiger sprang upon his cowardly foe," and fells him to the earth, Lumsden's head striking a rock. It is to be hoped that the surgeon-author marked out a course for that bullet through the wrist, so that no important nerves or vessels were injured; otherwise it would be difficult to believe that the hero could make such effective use of the wounded member.

Lumsden is supposed to be dead, but of course recovers. Douglass, however, in spite of his medical training, which should have led him to offer aid to the injured man, not only takes the word of a gamekeeper who pronounces the man dead, but also takes his advice to "haud awa frae these parts."

To this end he first visits his own home, spends an evening with his friends, and then goes to the coast, where he takes passage for America, that land of refuge for "all sorts and conditions of men." Curiously enough he makes no great effort to hide his movements, yet is not astonished that no detective from the celebrated Scotland Yard dogs his footsteps. As a hero of fiction he certainly ought to have been more than amazed at this dereliction on the part of a detective agency famous (in fiction) for astuteness.

What is more astonishing is that he should leave his sweetheart without telling his love. That is, it is astonishing to those readers who are in the habit of following fiction heroes through intricate love affairs. Those, however, who have grasped the moral lesson of the treatise readily comprehend that the psychological study would have been marred if the hero had acted as any other man in his situation would, whether in life or in fiction.

Aside from these blemishes, which are insignificant if we consider the tale as a study, which it claims to be, and not as a novel, which it is not, there are many passages which are written in masterly style, and some character sketches which are true to life. Indeed the effective portrayal of the subordinate characters serve to make the principles seem more puppet-like.

The moral of the treatise is that the mating of two hearts is more to be admired than the marriage of two bodies. If a man and woman love one another and mate without ceremonial marriage, the world calls the woman wanton. If a woman fancies wealth, and without love exchanges her virginity for the luxuries of riches, first however, conforming to the rules of Church and State, the wise old world says she is wife and virtuous. Dr. Skene declares that the opposite is true. Many will agree with him, at least in theory, who may nevertheless be inconsistent enough to prefer that their own daughters should obtain certificates of marriage in due form, and have the same duly recorded in the office of the county clerk.

After all the wise old world perhaps is not so foolish in its advocacy of ceremonial marriage. Such form of wedlock, though occasionally abused, is really no bar to the union of true lovers; many such couples have been so mated with satisfactory results. On the other hand, much possible confusion is thus obviated, especially in connection with property rights in real estate, as well as in tracing lineage. Ceremonial marriage is also a protection to the woman, which is its chief advantage.

When we remember that the author is a medical man, and a specialist in gynecology, perhaps the most remarkable feature of the book is his treatment of the "old wife" notion of "mother's influence," which he carries to an extreme never attempted by medical man, or old maid gossip.

In the scene to which allusion has been made, after knocking Lumsden down, Douglass takes Jessie by the hands and leads her to her home. After his departure she discovers blood on one of her fingers, and kisses the place because it is stained with "his" blood. A year or two later, however, despite her intense love for Douglass, the intensity of which is to be exhibited in a most marvelous manner, Jessie marries another man, and in the due course of nature gives birth to a child, which grows up to be a living embodiment of her absent lover, showing no resemblance to its father, who seems to have played a purely physical part in the impregnation of the ova, the future development, in utero, as well as in life, having no dependence upon himself. But more marvelous still, the child has a birth mark, a blood red spot on the finger, similar to that on which Douglass had left his bloody imprint. Thus Dr. Skene has suggested a new wonder in medical mysteries; an impression on the mother, transmitted to an offspring unconceived at the time when the impression was made.

The celebrated London alienist and careful writer on medical topics, Dr. D. Hack Tuke, mentions a series of experiments made in a maternity hospital in London. The interne asked a thousand pregnant women whether they had knowledge of any impressions which might "mark" their babies. A large number expected such marking, but none of these expectations were realized. Many babies were born with birthmarks, and then the mothers recollected the causes to which the marks could be attributed. But the interne rightly argued that causes, discovered *after birth* were worthless as argument, in view of the impotency of the causes reported *prior* to the births.

This criticism of the book should not be closed without an allusion to a "paper" which young Dr. Douglass reads before a medical society in New York City, and which is given in full in the seventeenth chapter. This is a description of the various kinds of doctors which exist, and is one of the cleverest satires in our language. Indeed in conception and treatment it is far in advance of the rest of the book, so much so that one is tempted to believe that this incident is taken from the early days of the author, and that he, instead of his fiction hero, wrote and read the paper long ago. This notion is supported by the fact that the style of names was much in vogue with writers of thirty years ago. Thus he describes Dr. Putter, Miss Antiquely Wailing, Mrs. Blataloni, Mrs. Prim, Dr. Dashington, Mr. Feedwell Richly, Dr. Modern Newman, Mr. Willful Headly, Dr. Cuninghame Sliely, Rev. Joshua Gassington, Mrs. Gossipy, Miss Mary Cute, Mrs. Tartar, Mr. Poolseller and a number of others, whose characters are indicated by their names. One is strongly reminded of Mr. Going Gone, the auctioneer in "Ten Thousand a Year," and Messrs. Quirk, Gammon and Snap, the firm of lawyers in the same book. Thackeray's Becky Sharp is another example from the period in which it would seem that the satire by Dr. Douglass (or Dr. Skene) was written.

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## CORRESPONDENCE

DEAR DOCTOR OTTOLENGUI:—

I have read the editorial in the August ITEMS, and am under the impression that the National Board of Dental Examiners adopted a far different tone in addressing you from that employed by them in their communications to college deans.

In addressing these latter, I understand the above named body adopted a mandatory tone, implying, at least tacitly, that they were operating within a legal right to attempt the enforcement of their self-made rules; this of course left the colleges but one course to pursue, viz., to ignore their implied threat, for their communications did contain a covert threat. I do not question for a minute that had this body issued a manifesto more temperate in tone, it would have received a respectful hearing, but when a self elected body as the one named, presumes to imperintently dictate, not advise, or suggest, what shall be the college curriculum, it is time that they be brought to a realization of their actual position. I have heard in our societies much indignation expressed at this hysterical outburst of these examiners, and outspoken advice that every State society take cognizance of the usurpation of these men.

There is another feature of this matter which **Examiners Should be** needs serious attention, and that is the class and **Chosen by Competi-** type of individuals conducting State examinations. **tive Examination.** I have always thought it would be well were all examiners selected after a competitive examination, so that we might have some assurance that the examiners are actually fit men to act as examiners.

I have reason to believe that several examiners in the States are relatively as illiterate as the candidates whose answers are contained in the August ITEMS, I say relatively not entirely. I maintain that any man who writes as a school boy, and who could not pass a 90 per cent. examination in elementary chemistry, normal histology, general and special, and who is unacquainted with the principles of surgical pathology is an unfit man to serve as an examiner, and yet, you know, I know, and the profession at large knows, that men serve on Examining Boards who never owned or used a microscope, and could not without looking up the subject, describe the histology of the dental pulp, give a differential diagnosis of its diseases, or make a qualitative analysis of the commonest medicinal agents which they use.

How many State examiners do you know whom you would be willing to have conduct your practice for six months, and yet, with all of these shortcomings, these men are named as qualified to pass upon the acquirements of men, in many cases, better educated than themselves. On the other hand, there are men I know, and know well, who are well qualified to act; and it is this assurance of fitness that should be looked into. The colleges say, "we are perfectly willing to have you examine our graduated men"; but for my own part, I should like to add, "are you (the examiner) willing to have college faculties examine you, and publish the result?"

No man more than myself has a keener appreciation of the higher dental education, for I worked for it last winter until I broke down entirely, and never for a moment have I lost sight of the responsibility of the teacher to the public, and to the dignity of the profession, but it is discouraging after this labor to hear from captious critics that students do not come up to a standard which a body of men, totally inexperienced in teaching, have formulated. Let them stop and consider that they themselves, as many or all of us, did not become safe practitioners until our degrees were, say, ten years old. All that any college faculty can hope to do in academic, scientific or professional studies, is to so ground a pupil in the principles involved that he may be launched to begin practice, to do as we all have done, make blunders, acquire knowledge slowly and by degrees to profit by our mistakes and try to deal justly by our fellow man. No college can make a man an accomplished practitioner; it has done well, when it has taught him principles. To attempt more than this is to produce not a finished dentist, but a dental abortion.

HENRY H. BURCHARD, Philadelphia.



### **Resolutions on the Death of Dr. Frank Abbott and Dr. Francis Peabody.**

The Committee on Necrology of the National Association of Dental Faculties, at Old Point Comfort, Va., reports the following resolutions on the death of Dr. Frank Abbott, of New York, and Dr. Francis Peabody, of Louisville, Ky.:

Whereas, Death has removed from our ranks Dr. Frank Abbott, of New York; and

Whereas, On account of his social qualities, his genial companionship, and his ability as a practitioner and teacher of dentistry, we realize the great loss to the profession in his death; therefore be it

*Resolved*, That we tender to his family the sincere sympathy of this association, and request that these resolutions be spread upon the minutes of this association; and be it further

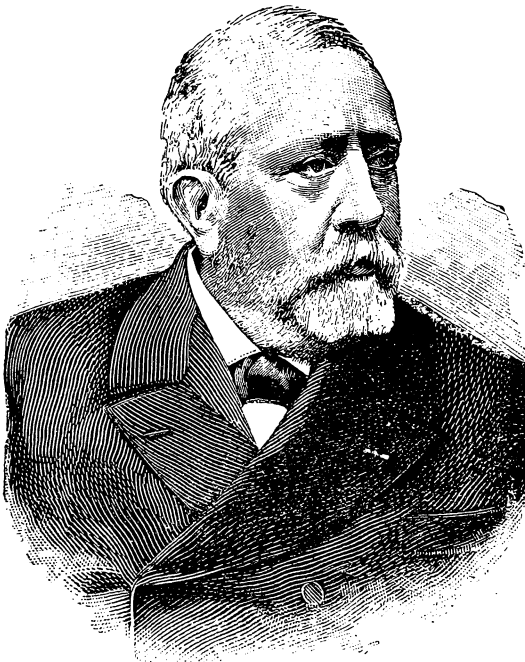
*Resolved*, That a copy of these resolutions be sent to the several dental journals of this country for publication.

Whereas, Death has taken from among us Dr. Francis Peabody, of Louisville, Ky.; and

Whereas, We feel that in his death the profession has sustained the loss of an able practitioner and teacher; therefore be it

*Resolved*, That we tender to his bereaved family our heartfelt sympathy, and that we cause these resolutions to be entered upon the minutes of this association; and be it further

*Resolved*, That a copy of these resolutions be sent to the dental journals for publication.



DR. E. MAGITOT.

### Dr. E. Magitot.

The Odontological Society of Chicago, recognizing the great services rendered by Magitot toward the advancement of dental science, has adopted, and ordered sent to the family of the deceased and to the dental journals of the United States and France, the following:

Magitot was born in Paris in 1833 and died there during the current year. His first contribution to dental literature was made in 1857 at the age of 24, relating to the structure and development of the human teeth, while the last came from his pen in 1897, just before he died. During these forty years Magitot wrote no less than sixty-five

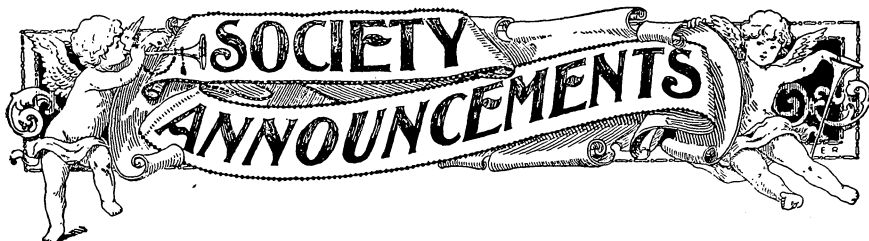
books, essays, pamphlets, etc., dealing exclusively with nearly every phase of dental embryology, histology, biology, pathology, hygiene, etc. No writer of any age has made as many, as varied, and as valuable contributions to dental science as Magitot.

The priceless services rendered by him entitle him to rank as one of the foremost investigators in odontology. He was a member of numerous scientific bodies and societies, whose members sincerely mourn his loss. It may be truly said, that when Magitot passed away from the scenes of human activity, dental science, not of France alone, but of the entire world, lost one of its noblest and greatest minds.

The dental profession of the United States, recognizing and appreciating Magitot's services, keenly mourns and sympathizes with his bereaved family and the profession in France, by reason of his demise.

A. W. HARLAN,  
J. W. WASSALL,  
LOUIS OTTOFY,  
Committee.

Chicago, September 1, 1897.



### **Jefferson County Dental Society.**

The Jefferson County Dental Society will hold its third annual meeting at the Woodruff House, Watertown, N. Y., Monday, December 13, 1897. An excellent program has been prepared, consisting of clinics, essays, etc.

Dr. Ottolengui has consented to be present at this meeting, and will present a lecture on Orthodontia.

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### **National Association of Dental Examiners.**

At the annual session of the National Association of Dental Examiners, held at Old Point Comfort, Va., July 30 to August 2, 1897, twenty-two States present, the following officers were elected for the new year:

President, C. G. Edwards, D.D.S., Louisville, Ky.; Vice-President, G. M. Parmele, D.M.D., Hartford, Conn.; Secretary and Treasurer, Charles A. Meeker, D.D.S., Newark, N. J.

The President appointed as members of the Committee on Colleges: G. Carleton Brown, D.D.S., chairman, Elizabeth, N. J.; H. H. Johnson, D.D.S., Macon, Ga.; M. H. Chappell, D.D.S., Knightstown, Ind.; L. Ashley Faught, D.D.S., secretary by appointment of the committee, 1415 Walnut street, Philadelphia, Pa.

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### **Maryland State Dental Association.**

At the annual meeting of the Maryland State Dental Association the following officers were elected for the year '97-'98:

F. F. Drew, D.D.S., President; W. G. Sykes, D.D.S., First Vice-President; E. E. Cruzen, D.D.S., Second Vice-President; W. W. Dunbracco, D.D.S., Corresponding Secretary; G. E. Hardy, M.D., D.D.S., Recording Secretary; S. C. Pennington, Treasurer. W. A. Mills, D.D.S.; G. R. Carter, D.D.S.; W. W. Bruce, D.D.S., Executive Committee.

W. W. DUNBRACCO, Cor. Sec.,  
Baltimore, Md.

**Rhode Island Dental Society.**

The annual meeting of the Rhode Island Dental Society was held at Newport, July 13, 1897. The list of officers for this year follow:

President, P. J. Heffern, D.D.S., Pawtucket; Vice-President, C. J. Allen, D.D.S., Providence; Secretary, C. A. Carr, D.M.D., Newport; Treasurer, H. W. Gillett, D.M.D., Newport; Librarian, C. D. Winsor, D.D.S., Providence.

Executive Committee—V. J. Baggott, D.D.S., Providence; F. Bradley, D.M.D., Newport; B. L. Davis, D.D.S., Woonsocket.

The members present listened with much pleasure and profit to addresses by Eugene H. Smith, D.M.D., Dean of the Harvard Dental School, and Julius W. Werner, D.M.D., of Boston.

CLARENCE A. CARR, Secy.

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**New Jersey State Dental Society.**

At the twenty-seventh annual meeting of the New Jersey State Dental Society, held July 21, 22 and 23, 1897, at Atlantic City, N. J., the following officers were elected:

President, Dr. J. L. Carter, Orange; Vice-President, Dr. J. Allen Osmun, Newark; Secretary, Dr. Chas. A. Meeker, Newark; Treasurer, Dr. H. A. Hull, New Brunswick.

Executive Committee—Dr. H. S. Sutphen, Newark; Dr. Oscar Adelberg, Elizabeth; Dr. F. E. Riley, Newark; Dr. C. W. F. Holbrook, Newark.

Membership Committee—Dr. W. E. Truex, Freehold; Dr. F. L. Hindle, New Brunswick; Drs. F. C. Gregory and Wm. L. Fish, Newark; Dr. W. H. Pruden, Paterson.

